METALSISTEM®

TECHNICAL MANUAL

SUPER 1-2-3

Technical Manual
code MT08

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DATA SHEET LIST

MT08 - SUPER 1-2-3 TECHNICAL MANUAL - REVISIONS LOG

Data sheet no.	Data sheet title	MT08 revision	0	1	2	3	4	5	6	7
		Revision date	04/09/2020	10/11/2020	04/12/2020	05/02/2021	05/03/2021	16/03/2021	02/04/2021	10/06/2021
05/05/05	Calculation, safety and installation prescriptions		2	2	2	2	2	2	2	2
05/10/05	Super 1-2-3 bay geometry		0	0	0	0	0	0	0	0
05/10/10	Load bearing capacity verification procedure		0	0	0	0	0	0	0	0
10/05/05	Super 1-2-3 uprights		0	0	0	0	0	0	0	0
10/05/10	Super 1-2-3 standard frame bracing		0	0	0	0	0	0	0	0
10/05/20	Complete frames with standard bracing configuration		0	0	0	0	0	0	0	1
10/05/25	Complete frames with reinforced bracing configuration		0	0	0	0	0	0	0	0
10/05/30	Super 1-2-3 base plates and anchor bolts		0	1	1	1	1	1	1	1
10/05/35	Frame completion accessories		0	0	0	0	0	0	0	0
10/10/05	S0/S1/S2/S3 beams		1	1	1	1	1	1	1	1
10/10/10	S1G/S2G/S3G beams		1	1	1	1	1	1	1	1
10/10/15	H12 steel panels		2	2	2	3	3	3	3	3
10/10/20	H25 steel panels		3	3	3	3	3	3	3	3
10/10/25	H25 steel panels with 50% perforation		1	1	1	1	1	1	1	1
10/10/35	Plastic shelf panels		-	0	0	0	0	0	0	0
10/15/05	Spine and horizontal bracing		0	0	0	0	0	0	0	0
10/15/15	Reinforcement bar		1	1	2	3	4	5	6	6
15/05/05	Frame load bearing capacity of unbraced rows		0	0	0	0	1	1	1	1
15/05/10	Frame load bearing capacity of rows with reinforcement bars		0	0	0	0	1	1	1	1
15/05/15	Frame load bearing capacity of rows with less than 4 bays and reinforcement bars		0	0	0	0	1	1	1	1
15/05/20	Frame load bearing capacity of braced rows		0	0	0	0	0	0	0	0
15/10/05	Load bearing capacity of complete shelves with H12 and H25 panels		3	3	3	3	4	4	4	4
15/10/10	Load bearing capacity of complete shelves with H25 50% perforated panels		2	2	2	2	3	3	3	3

DATA SHEETS - REVISIONS LOG

Data sheet no.	Data sheet title	Rev.	Date	Amendments	Author
05/05/05	Calculation, safety and installation prescriptions	2	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
05/10/05	Super 1-2-3 bay geometry	0	04/09/2020	First release	Arturo di Gioia
05/10/10	Load bearing capacity verification procedure	0	04/09/2020	First release	Arturo di Gioia
10/05/05	Super 1-2-3 uprights	0	04/09/2020	First release	Arturo di Gioia
10/05/10	Super 1-2-3 frame bracing	0	04/09/2020	First release	Arturo di Gioia
10/05/20	Complete frames with standard bracing configuration	0	04/09/2020	First release	Arturo di Gioia
		1	10/06/2021	Corrected frame height range	Arturo di Gioia
10/05/25	Complete reinforced frames with reinforced bracing configuration	0	04/09/2020	First release	Arturo di Gioia
10/05/30	Super 1-2-3 base plates and anchor bolts	0	04/09/2020	First release	Arturo di Gioia
		1	10/11/2020	Correction to prescriptions for heavy duty base plate	Arturo di Gioia
10/05/35	Frame completion accessories	0	04/09/2020	First release	Arturo di Gioia
10/10/05	S0/S1/S2/S3 beams	1	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
10/10/10	S1G/S2G/S3G beams	1	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
10/10/15	H12 steel panels	2	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
10/10/20	H25 steel panels	3	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
10/10/25	H25 steel panels with 50% perforation	1	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
10/10/35	Plastic shelf panels	0	10/11/2020	First release	Arturo di Gioia
10/15/05	Spine and horizontal bracing	0	04/09/2020	First release	Arturo di Gioia
10/15/15	Reinforcement bar	1	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
		2	04/12/2020	New manual assembly method	Arturo di Gioia
		3	05/02/2021	Correction to order length	David Terzi
		4	05/03/2021	New BS2 and BS3 bars	Arturo di Gioia
		5	16/03/2021	Correction of typos in BS2 bar order codes	Arturo di Gioia
		6	02/04/2021	Correction of typo on wall anchoring	Arturo di Gioia
15/05/05	Frame load bearing capacity of unbraced rows	0	04/09/2020	First release	Arturo di Gioia
		1	05/03/2021	Revision and improvements	Arturo di Gioia
15/05/10	Frame load bearing capacity of rows with reinforcement bars	0	04/09/2020	First release	Arturo di Gioia
		1	05/03/2021	Revision and improvements BS2 stabilization bar	Arturo di Gioia
15/05/15	Frame load bearing capacity of rows with less than 4 bays and reinforcement bars	0	04/09/2020	First release	Arturo di Gioia
		1	05/03/2021	Revision and improvements BS2 stabilization bar	Arturo di Gioia
15/05/20	Frame load bearing capacity of braced rows	0	04/09/2020	First release	Arturo di Gioia
15/10/05	Load bearing capacity of complete shelves with H12 and H25 panels	3	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
		4	05/03/2021	BS2 and BS3 stabilization bars	Arturo di Gioia
15/10/10	Load bearing capacity of complete shelves with H25 50% perforated panels	2	04/09/2020	First release in Super 1-2-3 manual	Arturo di Gioia
		3	05/03/2021	BS2 and BS3 stabilization bars	Arturo di Gioia

Issued by: Area Tecnica

Approved by: Area Tecnica

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CALCULATION, SAFETY AND INSTALLATION PRESCRIPTIONS

A products correct technical application and its visual appearance distinguishes both the customer and the manufacturer.
METALSISTEM recommends that customers apply the maximum diligence in the application and use of the product in strict conformity with the prescriptions and characteristics shown in this manual. The design and assembly of installations must be carried out by qualified expert personnel.

METALSISTEM declines all liability for improper use of the product or use that is not specifically authorized.

SCOPE

This manual applies to hand loaded shelving, including:

- Hand loaded single or double side, unbraced or braced, shelving;
- Shelving accessed with man on board order pickers;

Dimensioning of two tier shelving is described in the "Mezzanine and two tier shelving technical manual", code MT01. Installations other than those described in this manual require additional engineering conducted by the METALSISTEM technical department.

Tolerances, deformations and clearances

Suitability of floor slabs

Before commencing any installation, the suitability of the floor slab must be checked. The customer must provide the necessary data to perform this assessment.

The flatness of the floor slab must be checked, taking into account the dimensions, the intended use and the load bearing capacity of the shelving.

In general, shelvings with heights up to 3000mm, with a frame height to depth ratio less than 5:1 and with low load bearing capacity requirement do not need special levelling measures.
For all other cases, the correct alignment of the shelving is essential to guarantee the correct function and safety of the installation. An accurate determination of floor slab flatness and remediations is therefore essential.

In such cases UNI EN 15620 "Steel static storage systems - Adjustable pallet racking - Tolerances, deformations and clearances" is a useful reference source.

Clearances

The necessary clearances are system design elements and they must be checked with the customer in compliance with any architectural constraints imposed by statutory legislation in the place of installation.

Assembly

The shelving must be erected by adequately trained and skilled personnel in conformity with the diagrams and indications in this technical manual and installation instructions. Special attention must be given to the tightening of bolts and the installation of all the safety devices (refer also to the "Installation, operating and maintenance manual for light gauge shelving", code MUM03) and in compliance with the safety procedures, using suitable tools and PPE equipment commensurate with the activities to be carried out. All activities must be in compliance with working environment, equipment and safety measures imposed by statutory legislation in the place of installation.

Alignment of the shelving

All prescriptions concerning correct alignment of the shelving are given in the "Installation, operating and maintenance manual for light gauge shelving", code MUM03.

Load bearing capacity PLAQUES and safety signage

Refer to the statutory regulations of the installation location for guide lines regarding the application of safety signage to installations. In Europe, the 92/58/EEC directive and its amendments provide the minimum requirements for the provision of safety and/or health signs at work.

It is mandatory to install the following minimum safety signs:

- Generic danger sign (shown for example in annex XXV of Italian legislative decree 81/08, consisting of an exclamation mark);
- Load bearing capacity plates (required by the aforementioned legislation) in the form of an information sign. The load bearing capacity plates must be affixed in a visible position and must show the series, year of construction, load bearing capacity of frames and shelves (uniformly distributed load), the unit load, and the number of levels.

It is good practice to also provide:

- Emergency exit signs erected in conformity with the instruction of local authorities and/or fire consultant;
- Specific prohibitions and danger signs, if required.

Standard safety of shelving

To guarantee the safety of the installation comply scrupulously with all the prescriptions contained in this manual; with special reference to:

- Load bearing capacity and geometry limitations for shelving that is not anchored to the floor;
- Indications concerning the slenderness ratio of frames (base to height ratio);
- Adoption of top ties;
- Installation of beam safety clips.

If the shelving is subject to the risk of impact with material handling vehicles (man on board order pickers), the shelves must be anchored to the ground and equipped with suitable protections.

Anchoring to the floor and/or to the wall limits the risk of overturnig due to accidental events.

METALSISTEM will not be held liable for injuries or losses due to improper installation and/or usage.

Reference standards

Reference standards for theoretical calculations:

- FEM 10.2.06 part 2 *"Design of Hand Loaded Steel Static Shelving"*;
- UNI EN 1993-1-1:2015 *"Eurocode 3: "Design of steel structures. Part 1-1: General rules - General rules and rules for buildings"*;
- UNI EN 1993-1-3:2007 *"Eurocode 3: "Design of steel structures. Part 1-3 General Rules - Supplementary rules for cold-formed members and sheeting""*;
- UNI EN 1993-1-8:2005 *"Eurocode 3: "Design of steel structures. Part 1-8: Design of joints"*.

Reference standards for materials:

- UNI EN 10346:2015 *"Continuously hot-dip coated steel flat products for structural applications"*;
- UNI EN 10204:2005 *"Metallic products. Types of inspection documents" (Test certificate "3.1")"*.

Experimental tests

The structural design is based on results derived from laboratory testing conducted by the Engineering Faculty of the University of Trento, Italy, and by the laboratories of METALSISTEM Research Centre.

Modelling

The structural design has been conducted using the finite element method with ANSYS, STRAUS7 and IT.RACKS! software, in compliance with the indications of FEM 10.2.06 Part 2 standard.

PARTIAL COEFFICIENTS AND DEFORMATION LIMITS

Resistance and stability checks conform to the prescriptions of FEM 10.2.06 part 2 standard, with the following partial coefficients:

γ_Q=1.4

γ_{M0}=γ_{M1}=1.05

γ_{M2}=1.25

The load bearing capacity of beams complies with a limit deformation of L/200.

Installation environment, use of the product and maintenance

The load bearing capacities and the surface finish of the materials are based on use of the shelving in indoor non-aggressive environments. Use of the shelving outdoors or in environments with high risk of corrosion will automatically invalidate the warranty of surface finishes. If the shelving is to be installed outdoors, it is mandatory to consult the METALSISTEM Technical Department.

For guidelines regarding the normal use of the shelving and the periodic checks of its components, consult the "Installation, operating and maintenance manual for light gauge shelving", code MUM03.

METALSISTEM will not be held liable for injuries or losses due to improper or inappropriate maintenance failure to replace damaged components, unauthorized repairs and/or substitution with inadequate or non original components.

Raw material

All current METALSISTEM products are made from structural steel with specific test certificate 3.1 (UNI EN 10204) to guarantee the mechanical properties.

Depending on the structural relevance of the components, the materials employed have characteristics ranging between S315 and S355 for pickled steels and between S280 and S400 for galvanized steels (in compliance with UNI EN 10149 and with UNI EN 10346 respectively).

The surface finish of the steel is galvanized with "SENDZIMIR" process.

A subsequent powder coating can be applied optionally.

Fire protection

With regard to the normal application of the shelving, its behaviour and its fire resistance, consult the "Installation, use and maintenance manual for light gauge shelving", code MUM03. It is the responsibility of the shelving system designer to verify with the client any possible clearance needs deriving from integration requirements with fire protection systems.

Controls

The raw material employed is subject to constant incoming checks by the METALSISTEM internal Quality Control.

The checks concern the steel's mechanical characteristics (yield strength, ultimate strength and elongation) dimensional characteristics (thickness and length) and surface finish (absence of defects, uniformity and durability of the coating).

METALSISTEM has an in-house laboratory capable of performing tension tests (approx. 1,000/Year), metrological inspections with SIT (official Italian calibration service) certified instruments, and performance tests (stub column, node stiffness, shear, and flexure). Corrosion tests in salt spray and macrography tests or other specific tests are contracted out to external test laboratories).

The product checks performed in-house at the end of the production cycle and externally by RINA system certification organisation ensure constant quality of the articles sold.

Certificates

METALSISTEM products are supplied with the following certificates:

- Structural steelwork conversion centre – production workshop no. 753/10;
- Environmental management system – ISO 14001;
- Quality management system – ISO 9001;
- Occupational Health and Safety Management System – BS OHSAS 18001;
- CISI – quality and safety mark;
- AEO FULL – Authorized Economic Operator;
- UNI EN ISO 3834 – Qualified fusion welding process;
- EN 1090-1 – Certificate of conformity assessment of structural components.

Non-standard applications

For non-standard solutions and/or calculations, contact the METALSISTEM technical department.

METALSISTEM reserves the right to make any changes to the product it deems to be appropriate at any time.

Safety equipment

The purchaser is responsible to determine the type, locations, and needs of the safety apparel to be fitted to the installation (e.g.: upright and frame protection, floor guide rails, protections against the falling of stored goods, walkway protection and covers, seismic design) to mitigate the risks connected to the usage conditions of each specific installation. The vendor shall inform the purchaser of the available solutions and products, in order to correctly and knowingly choose the most suitable safety apparel based on their need.

Nevertheless it is the responsibility of the end user to verify the conformity of the installation with the evolution of safety and functional requirements that may occur during the service life of the installation.

SUPER 1-2-3 BAY GEOMETRY

The Super 1-2-3 bay geometry is determined by two nominal dimensions: frame depth and bay length, which approximate the dimension of the shelf.

All component dimensions are defined by their nominal dimension.

Standard frames are defined by the height, ranging from 1576mm to 5008mm, and nominal depth. The full range of frames is listed in Data sheet 10/05/20.

Beams are connected to the uprights at a 33mm pitch, Tab. 2 shows the possible connection points of the standard Super 1-2-3 beam to the frame uprights.

The minimum connection height from ground will vary according to the selection of the base plate and beam profile, as well as the presence of vertical bracing (Tab. 3).

The load bearing capacities specified in this manual are applicable to frames that comply with the slenderness prescriptions specified in Tab. 4.

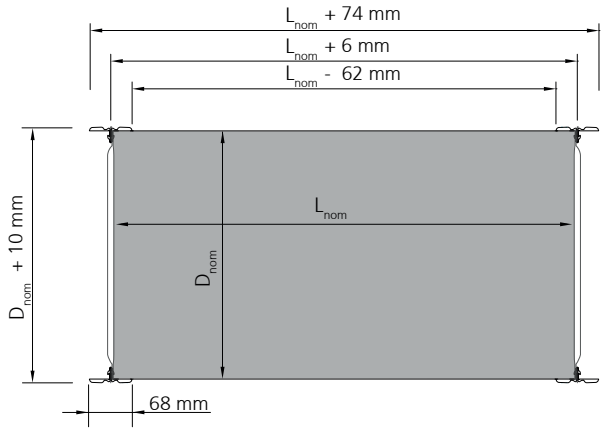


Fig. 1

Super 1-2-3 bay principal dimensions

Parameter	Measurement
Nominal bay length	L_{nom}
Nominal frame depth	D_{nom}
Uprights centre distance	L_{nom} + 6 mm
Net clearance	L_{nom} - 62 mm
Total bay dimension	L_{nom} + 74 mm
Real frame depth	D_{nom} + 10 mm

Tab. 1

Loading level heights from ground [mm]

56	782	1508	2234	2960	3686	4412
89	815	1541	2267	2993	3719	4445
122	848	1574	2300	3026	3752	4478
155	881	1607	2333	3059	3785	4511
188	914	1640	2366	3092	3818	4544
221	947	1673	2399	3125	3851	4577
254	980	1706	2432	3158	3884	4610
287	1013	1739	2465	3191	3917	4643
320	1046	1772	2498	3224	3950	4676
353	1079	1805	2531	3257	3983	4709
386	1112	1838	2564	3290	4016	4742
419	1145	1871	2597	3323	4049	4775
452	1178	1904	2630	3356	4082	4808
485	1211	1937	2663	3389	4115	4841
518	1244	1970	2696	3422	4148	4874
551	1277	2003	2729	3455	4181	4907
584	1310	2036	2762	3488	4214	4940
617	1343	2069	2795	3521	4247	4973
650	1376	2102	2828	3554	4280	5006
683	1409	2135	2861	3587	4313	
716	1442	2168	2894	3620	4346	
749	1475	2201	2927	3653	4379	

Tab. 2

Minimum height from ground [mm]

Beam type	S0/S1/S2/S3 (Data sheet 10/10/05)			S1G/S2G/S3G (Data sheet 10/10/10)		
Base plate type (Data sheet 10/05/30)	Plastic 68055.98 67005.98	Metal 67007.95	Heavy duty AL000012.95	Plastic 68055.98 67005.98	Metal 67007.95	Heavy duty AL000012.95
Unbraced shelving	89	56	122	122	89	155
Floor connected bracing (Data sheet 10/15/05)	-	122	122	-	155	155
Upright connected bracing (Data sheet 10/15/05)	-	221	221	-	221	221

Tab. 3

Frame installation conditions (Fig. 2)	Prescriptions
A - Frame with plastic base plates or metal base plates not anchored to ground with maximum height : base ratio of 5:1	Maximum height 2000mm; Wall anchoring; Load bearing capacity limits for frames with anchor bolts (Data sheet 05/10/10).
B - Frame with metal base plates anchored to ground with maximum height : base ratio of 6:1	Maximum height varies according to the frame selection (Data sheet 10/05/20 and Data sheet 10/05/25); Base type and anchoring according to the frame height (Data sheet 10/05/30).
C - Frame with metal base plates anchored to ground with maximum height : base ratio of 7:1	Maximum height varies according to the frame selection (Data sheet 10/05/20 and Data sheet 10/05/25); Base type and anchoring according to the frame height (Data sheet 10/05/30); Alternatively: Wall tie or top tie to type B frames without load bearing capacity reduction; or 10% load bearing capacity reduction compared to type B frames.
D - Frame with metal base plates anchored to ground with maximum height : base ratio of 8:1	Maximum height varies according to the frame selection (Data sheet 10/05/20 and Data sheet 10/05/25); Base type and anchoring according to the frame height (Data sheet 10/05/30); Wall ties on all frames or top ties to type B frames; 10% load bearing capacity reduction per level with respect to the value given in the load bearing capacity tables.

Tab. 4

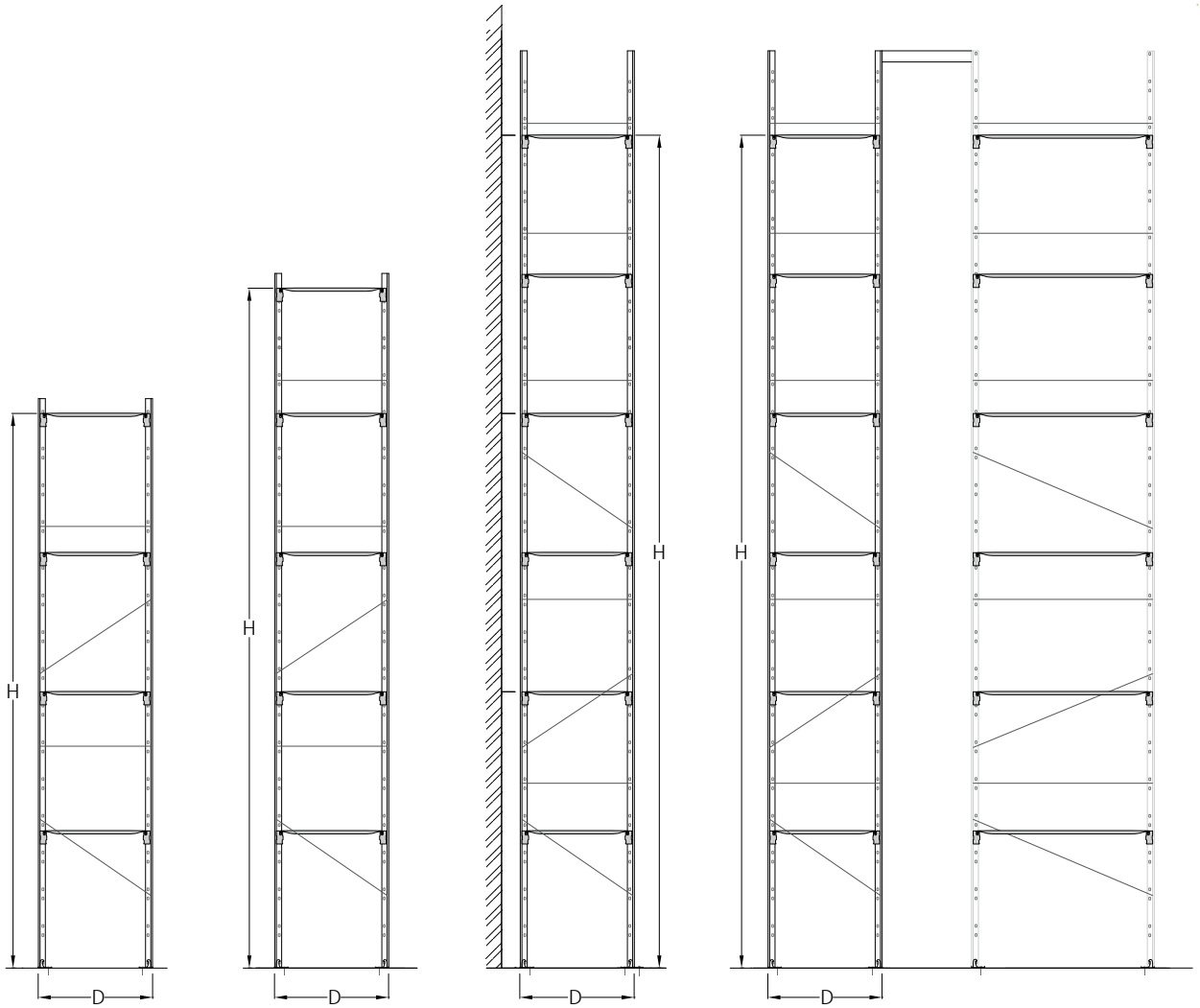


Fig. 2

LOAD BEARING CAPACITY VERIFICATION PROCEDURE

GENERAL INFORMATION

Super 1-2-3 shelving must be designed to safely take both vertical loads and horizontal loads that may compromise stability.

Unbraced shelving uses the resources supplied by the beam-upright connection in order to guarantee stability in relation to horizontal loads. Conversely, braced shelving uses dedicated elements to absorb horizontal loads.

In any case, the shelving is considered independent from surrounding structures. Some tips for anchoring to walls or other structures are given below.

In order to guarantee operational safety and performances of the shelving, all the uprights must be anchored to ground.

All tables in the technical manual are valid for static loads: the only horizontal loads considered are those deriving from out of plumb and loads associated to hand loaded goods.

There are 4 types of standard configurations with even beam distribution, with dedicated load bearing capacity tables:

1. Unbraced shelving with at least 4 consecutive bays;
2. Unbraced shelving with at least 4 consecutive bays and stabilization bars;
3. Unbraced shelving with less than 4 bays and stabilization bars;
4. Braced shelving.

The method of calculation of load bearing capacity and the main geometrical limits, which depend on the type of shelving adopted, are illustrated in the following paragraphs.

UNBRACED SHELVING

The maximum load bearing capacity per level of the unbraced shelving depends on the following parameters:

1. Number of bays;
2. Number of levels;
3. Frame height;
4. Length of beams;
5. Selected uprights and beams.

METALSISTEM Super 1-2-3 series unbraced shelving must comply with the following limitations:

Maximum frame height

2000mm for S0 beams - 3000mm for other beams

Maximum frame height : base ratio

8:1

Minimum number of bays

4

Maximum centre distance between beams

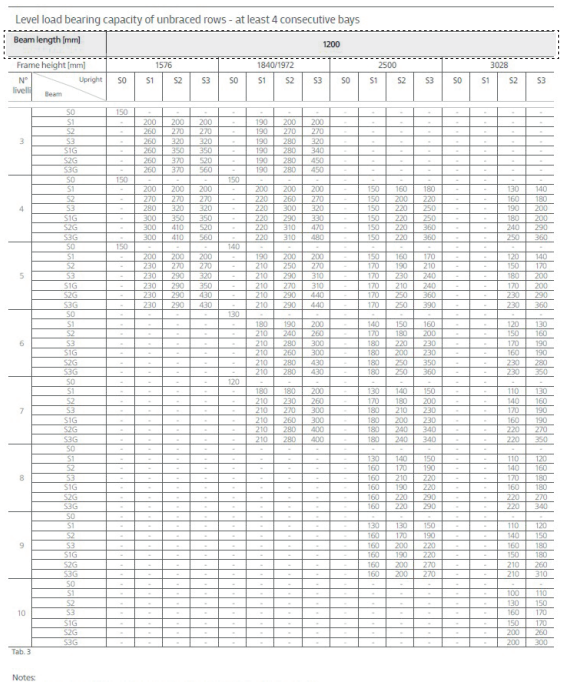
500mm for S0 beams - 700 mm for other beams

The load bearing capacity of unbraced shelving with at least 4 bays is tabulated in Data sheet 15/05/05.

The tables are organised in such a way as to make it possible to find the upright/beam combinations that satisfy, in relation to the desired shelving geometry, the required load bearing capacity per level.

Load bearing capacity must be checked as follows:

1. Select the table corresponding to the required beams length;



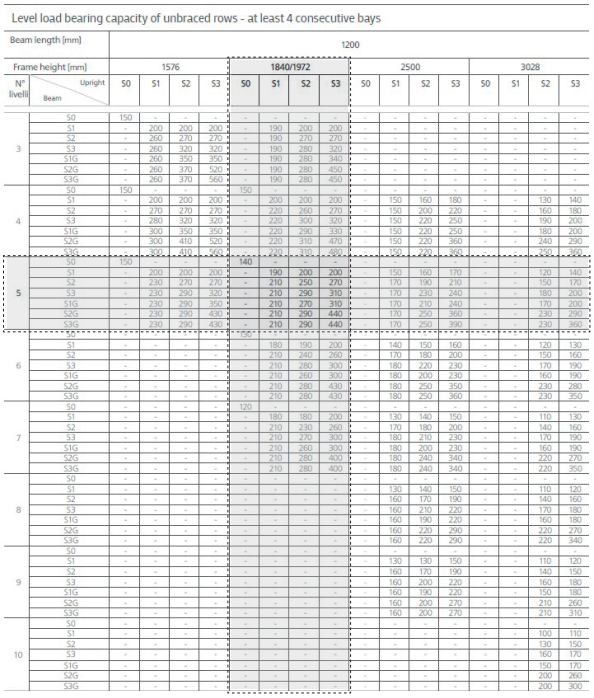
Level load bearing capacity of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1200															
Frame height [mm]		1576				1840/1972				2500				3028			
N° livelli	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	190	200	200	-	-	-	-	-	-	-	-
	S2	-	260	270	270	-	190	270	270	-	-	-	-	-	-	-	-
	S3	-	260	320	320	-	190	280	320	-	-	-	-	-	-	-	-
	S1G	-	260	350	350	-	190	280	340	-	-	-	-	-	-	-	-
	S2G	-	260	370	520	-	190	280	450	-	-	-	-	-	-	-	-
	S3G	-	260	370	560	-	190	280	470	-	-	-	-	-	-	-	-
4	S0	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	200	200	200	-	150	160	180	-	-	130	140
	S2	-	270	270	270	-	220	260	270	-	150	200	220	-	-	160	180
	S3	-	280	320	320	-	220	300	320	-	150	220	250	-	-	190	200
	S1G	-	300	350	350	-	220	290	330	-	150	220	250	-	-	180	200
	S2G	-	300	410	520	-	220	310	470	-	150	220	360	-	-	240	290
	S3G	-	300	410	560	-	220	310	480	-	150	220	360	-	-	250	360
5	S0	150	-	-	-	140	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	190	200	200	-	150	160	170	-	-	120	140
	S2	-	230	270	270	-	210	250	270	-	170	190	210	-	-	150	170
	S3	-	230	290	320	-	210	290	310	-	170	230	240	-	-	180	200
	S1G	-	230	290	350	-	210	270	310	-	170	210	240	-	-	170	200
	S2G	-	230	290	430	-	210	290	440	-	170	250	360	-	-	230	290
	S3G	-	230	290	430	-	210	290	440	-	170	250	390	-	-	230	360
6	S0	-	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	180	190	200	-	140	150	160	-	-	120	130
	S2	-	-	-	-	-	210	240	260	-	170	180	200	-	-	150	160
	S3	-	-	-	-	-	210	280	300	-	180	220	230	-	-	170	190
	S1G	-	-	-	-	-	210	260	300	-	180	200	230	-	-	160	190
	S2G	-	-	-	-	-	210	280	430	-	180	250	350	-	-	230	280
	S3G	-	-	-	-	-	210	280	430	-	180	250	360	-	-	230	350
7	S0	-	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	180	180	200	-	130	140	150	-	-	110	130
	S2	-	-	-	-	-	210	230	260	-	170	180	200	-	-	140	160
	S3	-	-	-	-	-	210	270	300	-	180	210	230	-	-	170	190
	S1G	-	-	-	-	-	210	260	300	-	180	200	230	-	-	160	190
	S2G	-	-	-	-	-	210	280	400	-	180	240	340	-	-	220	270
	S3G	-	-	-	-	-	210	280	400	-	180	240	340	-	-	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	140	150	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	210	220	-	-	170	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	-	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	-	220	270
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	-	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	150	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	-	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	-	210	260
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	-	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	260
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	300

Tab. 3

Notes:

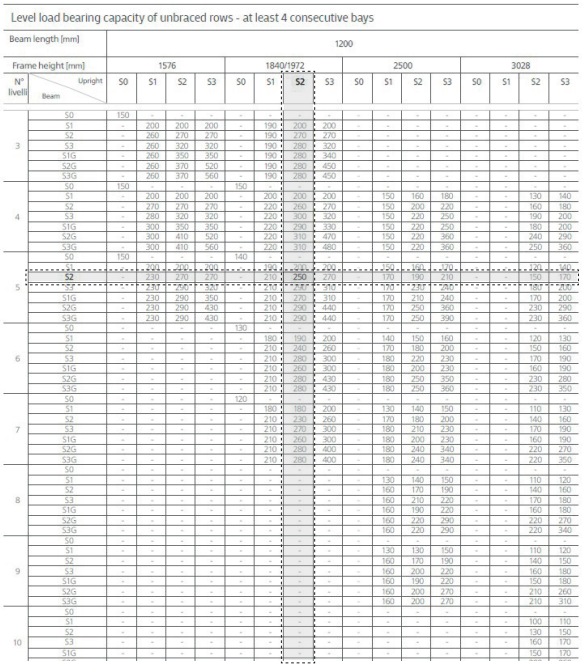
2. Find the box associated with the frame height and the number of levels for which the verification is required;



Level load bearing capacity of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1200															
Frame height [mm]		1576				1840/1972				2500				3028			
N° livelli	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	190	200	200	-	-	-	-	-	-	-	-
	S2	-	260	270	270	-	190	270	270	-	-	-	-	-	-	-	-
	S3	-	260	320	320	-	190	280	320	-	-	-	-	-	-	-	-
	S1G	-	260	350	350	-	190	280	340	-	-	-	-	-	-	-	-
	S2G	-	260	370	520	-	190	280	450	-	-	-	-	-	-	-	-
	S3G	-	260	370	560	-	190	280	450	-	-	-	-	-	-	-	-
4	S0	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	200	200	200	-	150	160	180	-	-	130	140
	S2	-	270	270	270	-	220	260	270	-	150	200	220	-	-	160	180
	S3	-	280	320	320	-	220	300	320	-	150	220	250	-	-	190	200
	S1G	-	300	350	350	-	220	290	330	-	150	220	250	-	-	180	200
	S2G	-	300	410	520	-	220	310	470	-	150	220	360	-	-	240	290
	S3G	-	300	410	560	-	220	310	480	-	150	220	360	-	-	250	360
5	S0	150	-	-	-	140	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	**190**	**200**	**200**	-	150	160	170	-	-	120	140
	S2	-	230	270	270	-	**210**	**250**	**270**	-	170	190	210	-	-	150	170
	S3	-	230	290	320	-	**210**	**290**	**310**	-	170	230	240	-	-	180	200
	S1G	-	230	290	350	-	**210**	**270**	**310**	-	170	210	240	-	-	170	200
	S2G	-	230	290	430	-	**210**	**290**	**440**	-	170	250	360	-	-	230	290
	S3G	-	230	290	430	-	**210**	**290**	**440**	-	170	250	390	-	-	230	360
6	S0	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	180	190	200	-	140	150	160	-	-	120	130
	S2	-	-	-	-	-	210	240	260	-	170	180	200	-	-	150	160
	S3	-	-	-	-	-	210	280	300	-	180	220	230	-	-	170	190
	S1G	-	-	-	-	-	210	260	300	-	180	200	230	-	-	160	190
	S2G	-	-	-	-	-	210	280	430	-	180	250	350	-	-	230	280
	S3G	-	-	-	-	-	210	280	430	-	180	250	360	-	-	230	350
7	S0	-	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	180	180	200	-	130	140	150	-	-	110	130
	S2	-	-	-	-	-	210	230	260	-	170	180	200	-	-	140	160
	S3	-	-	-	-	-	210	270	300	-	180	210	230	-	-	170	190
	S1G	-	-	-	-	-	210	260	300	-	180	200	230	-	-	160	190
	S2G	-	-	-	-	-	210	280	400	-	180	240	340	-	-	220	270
	S3G	-	-	-	-	-	210	280	400	-	180	240	340	-	-	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	140	150	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	210	220	-	-	170	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	-	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	-	220	270
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	-	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	150	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	-	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	-	210	260
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	-	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	260
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	300

3. Select the required upright type and beam type from among those that guarantee load bearing capacity at least equivalent to the required value.



Level load bearing capacity of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1200															
Frame height [mm]		1576				1840/1972				2500				3028			
N° livelli	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	190	200	200	-	-	-	-	-	-	-	-
	S2	-	260	270	270	-	190	270	270	-	-	-	-	-	-	-	-
	S3	-	260	320	320	-	190	280	320	-	-	-	-	-	-	-	-
	S1G	-	260	350	350	-	190	280	340	-	-	-	-	-	-	-	-
	S2G	-	260	370	520	-	190	280	450	-	-	-	-	-	-	-	-
	S3G	-	260	370	560	-	190	280	450	-	-	-	-	-	-	-	-
4	S0	150	-	-	-	150	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	200	200	200	-	150	160	180	-	-	130	140
	S2	-	270	270	270	-	220	260	270	-	150	200	220	-	-	160	180
	S3	-	280	320	320	-	220	300	320	-	150	220	250	-	-	190	200
	S1G	-	300	350	350	-	220	290	330	-	150	220	250	-	-	180	200
	S2G	-	300	410	520	-	220	310	470	-	150	220	360	-	-	240	290
	S3G	-	300	410	560	-	220	310	480	-	150	220	360	-	-	250	360
5	S0	150	-	-	-	140	-	-	-	-	-	-	-	-	-	-	-
	S1	-	200	200	200	-	190	200	200	-	150	160	170	-	-	120	140
	S2	-	230	270	270	-	210	250	270	-	170	190	210	-	-	150	170
	S3	-	230	290	320	-	210	290	310	-	170	230	240	-	-	180	200
	S1G	-	230	290	350	-	210	270	310	-	170	210	240	-	-	170	200
	S2G	-	230	290	430	-	210	290	440	-	170	250	360	-	-	230	290
	S3G	-	230	290	430	-	210	290	440	-	170	250	390	-	-	230	360
6	S0	-	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	180	190	200	-	140	150	160	-	-	120	130
	S2	-	-	-	-	-	210	240	260	-	170	180	200	-	-	150	160
	S3	-	-	-	-	-	210	280	300	-	180	220	230	-	-	170	190
	S1G	-	-	-	-	-	210	260	300	-	180	200	230	-	-	160	190
	S2G	-	-	-	-	-	210	280	430	-	180	250	350	-	-	230	280
	S3G	-	-	-	-	-	210	280	430	-	180	250	360	-	-	230	350
7	S0	-	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	180	180	200	-	130	140	150	-	-	110	130
	S2	-	-	-	-	-	210	230	260	-	170	180	200	-	-	140	160
	S3	-	-	-	-	-	210	270	300	-	180	210	230	-	-	170	190
	S1G	-	-	-	-	-	210	260	300	-	180	200	230	-	-	160	190
	S2G	-	-	-	-	-	210	280	400	-	180	240	340	-	-	220	270
	S3G	-	-	-	-	-	210	280	400	-	180	240	340	-	-	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	140	150	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	210	220	-	-	170	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	-	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	-	220	270
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	-	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	150	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	-	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	-	210	260
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	-	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	260
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	300

Having established the maximum admissible load per level, select the type of steel plank that provides the required shelf load bearing capacity in accordance with the beam length and frame depth using the load bearing capacity tables in Data sheet 15/10/05 (H12 and H25 steel planks) and 15/10/10 (H25 50% perforated steel planks).

UNBRACED SHELVING WITH STABILISATION BARS

The stabilization bars make it possible to improve the load bearing capacities of Super 1-2-3 shelving without having to resort to bracing or wall ties. The load bearing capacity verification methodology is analogous to that employed for unbraced shelving. The load bearing capacity tables shown in Data sheet 15/05/10 are applicable to shelving with stabilization bars in compliance with the following conditions:

Maximum frame height

2500mm for S0 beams - 3500 mm for other beams

Maximum frame height : base ratio

8:1

Minimum number of bays

4

Maximum centre distance between beams

500mm for S0 beams - 700 mm for other beams

Reinforcement bars position

Indications in file 10/15/15

UNBRACED SHELVING WITH LESS THAN 4 BAYS AND STABILISATION BARS

Shelving with less than four bays must be braced or tied to a wall. Alternatively, stability can be guaranteed by fitting a stabilization bar behind all bays in accordance with the indications given in Data sheet 10/15/15. The load bearing capacity tables shown in Data sheet 15/05/15 are applicable to shelving with stabilization bars in compliance with the following conditions:

Maximum frame height

2000mm for S0 beams - 2500mm for other beams

Maximum frame height : base ratio

5:1

Minimum number of bays

2

Maximum centre distance between beams

500mm for S0 beams - 700 mm for other beams

Stabilization bars position

Indications in file 10/15/15

BRACED SHELVING

The load bearing capacity tables for braced shelving are applicable to the following cases:

- Spine bracing and horizontal bracing with standard stirrups (Data sheet 10/15/05);
- Wall ties or anchorage to another structure in accordance with the prescriptions in the following section.

The upright frame load bearing capacities shown in Data sheet 10/05/20 depend on the following parameters:

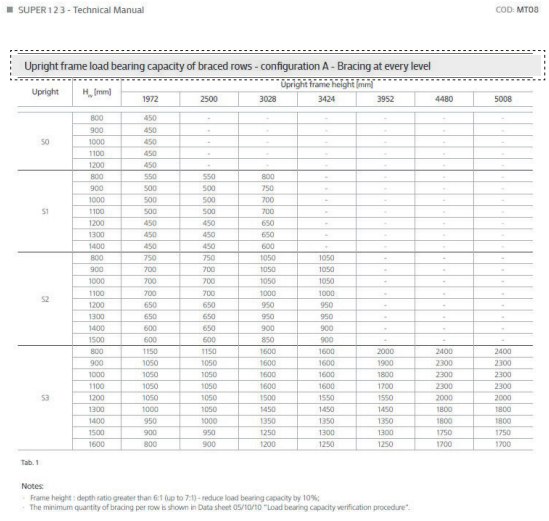
1. Upright frame height;
2. Spine bracing stirrups attachment points centre distance;
3. Uprights employed;
4. Loading level configurations.

The load bearing capacities per single loading level can be calculated by dividing the frame load bearing capacity by the number of loading levels.

In any event, the load bearing capacities per single loading level cannot exceed the admissible loads for the beams and steel planks employed.

Load bearing capacity must be checked as follows:

1. Find the appropriate table for the geometry of the shelving to be checked;
2. Find the box associated with the frame height and beam type required;
3. Find the frame load bearing capacity in accordance with the centre distance between the spine bracing stirrup attachment points;



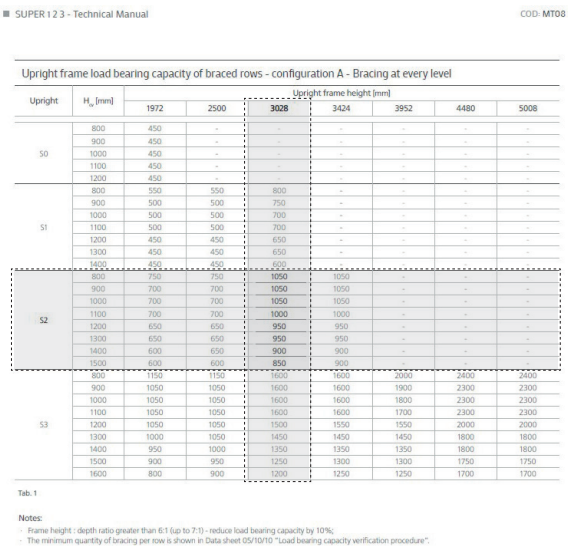
SUPER 1 2 3 - Technical Manual COD: MT08

Upright frame load bearing capacity of braced rows - configuration A - Bracing at every level

Upright	H_{ss} [mm]	Upright frame height [mm]						
		1972	2500	3028	3424	3952	4480	5008
S0	800	450	-	-	-	-	-	-
	900	450	-	-	-	-	-	-
	1000	450	-	-	-	-	-	-
	1100	450	-	-	-	-	-	-
	1200	450	-	-	-	-	-	-
S1	800	550	550	800	-	-	-	-
	900	500	500	750	-	-	-	-
	1000	500	500	700	-	-	-	-
	1100	500	500	700	-	-	-	-
	1200	450	450	650	-	-	-	-
	1300	450	450	650	-	-	-	-
	1400	450	450	600	-	-	-	-
S2	800	750	750	1050	1050	-	-	-
	900	700	700	1050	1050	-	-	-
	1000	700	700	1050	1050	-	-	-
	1100	700	700	1000	1000	-	-	-
	1200	650	650	950	950	-	-	-
	1300	650	650	950	950	-	-	-
	1400	600	650	900	900	-	-	-
	1500	600	600	850	900	-	-	-
S3	800	1150	1150	1600	1600	2000	2400	2400
	900	1050	1050	1600	1600	1900	2300	2300
	1000	1050	1050	1600	1600	1800	2300	2300
	1100	1050	1050	1600	1600	1700	2300	2300
	1200	1050	1050	1500	1550	1550	2000	2000
	1300	1000	1050	1450	1450	1450	1800	1800
	1400	950	1000	1350	1350	1350	1800	1800
	1500	900	950	1250	1300	1300	1750	1750
	1600	800	900	1200	1250	1250	1700	1700

Tab. 1

Notes:
- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- The minimum quantity of bracing per row is shown in Data sheet 05/10/10 "Load bearing capacity verification procedure".



SUPER 1 2 3 - Technical Manual COD: MT08

Upright frame load bearing capacity of braced rows - configuration A - Bracing at every level

Upright	H_{ss} [mm]	Upright frame height [mm]						
		1972	2500	3028	3424	3952	4480	5008
S0	800	450	-	-	-	-	-	-
	900	450	-	-	-	-	-	-
	1000	450	-	-	-	-	-	-
	1100	450	-	-	-	-	-	-
	1200	450	-	-	-	-	-	-
S1	800	550	550	800	-	-	-	-
	900	500	500	750	-	-	-	-
	1000	500	500	700	-	-	-	-
	1100	500	500	700	-	-	-	-
	1200	450	450	650	-	-	-	-
	1300	450	450	650	-	-	-	-
	1400	450	450	600	-	-	-	-
S2	800	750	750	1050	1050	-	-	-
	900	700	700	1050	1050	-	-	-
	1000	700	700	1050	1050	-	-	-
	1100	700	700	1000	1000	-	-	-
	1200	650	650	950	950	-	-	-
	1300	650	650	950	950	-	-	-
	1400	600	650	900	900	-	-	-
	1500	600	600	850	900	-	-	-
S3	800	1150	1150	1600	1600	2000	2400	2400
	900	1050	1050	1600	1600	1900	2300	2300
	1000	1050	1050	1600	1600	1800	2300	2300
	1100	1050	1050	1600	1600	1700	2300	2300
	1200	1050	1050	1500	1550	1550	2000	2000
	1300	1000	1050	1450	1450	1450	1800	1800
	1400	950	1000	1350	1350	1350	1800	1800
	1500	900	950	1250	1300	1300	1750	1750
	1600	800	900	1200	1250	1250	1700	1700

Tab. 1

Notes:
- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- The minimum quantity of bracing per row is shown in Data sheet 05/10/10 "Load bearing capacity verification procedure".

4. The load bearing capacity per level is calculated by dividing the frame load bearing capacity by the number of levels (alternatively, the required load bearing capacities required for each level are summed together, checking that the result is compatible with the frame load bearing capacity).

When applying bracing, a maximum number of bays must be specified for each module in accordance with the type of upright employed. The number of bays per module is the same for single and double side shelving.

Upright frame	Bays per module
SUPER ZERO (S0)	10
SUPER 1 (S1)	8
SUPER 2 (S2)	6
SUPER 3 (S3)	5

Example: a single or double side S1 row with 8 bays must have one down-aisle bracing module while a single or double side S1 row with 9 bays must have two down-aisle bracing modules.

WALL TIES

Super 1-2-3 shelving can be tied to a wall or to other structures to increase the practicality of use, to prevent toppling or to replace stabilization bracing.

In both cases a check must be performed to ensure the anchorage is sufficiently robust for the intended purpose and that the wall or external structure is capable of supporting the loads transmitted by the shelving.

Geometrical prescriptions:

Wall ties can substitute ground anchoring only if the following prescriptions are satisfied:

- 500daN maximum frame load bearing capacity;
- 2000mm maximum frame height;
- Frame height : base ratio max 5:1;
- Correctly anchor the back upright of all frames to the wall;
- Manual handling without mechanical equipment;
- Evaluation of eventual residual risks deriving from handling operations and accessories employed.

In all other cases the uprights must be anchored to ground.

If wall ties are designed to replace bracing, the following prescriptions are required:

- In longitudinal direction, the number of fixings must be identical to that of the bracing required for each type of upright frame (e.g.: wall ties on a S1 row at least every 8 bays);
- The distribution of the wall fixings in height must replicate that of the bracings that would otherwise be used;
- If only the shelving rear uprights are tied to the wall, install horizontal bracing to stabilize the front uprights.

Wall anchoring verification:

The load associated with an anchor point is obtained by dividing the vertical load of the entire row by the number of anchor points. E.g.: for shelving with 10 bays with a load of 1000daN/upright frame and 8 anchor points (16 anchor bolts), a single anchor point has an associated load of 1250daN.

Check that each point is able to guarantee transmission of a traction load and a shear load equal to 30daN or 2% of the associated load, whichever value is higher. The anchoring verification must also include a local assessment of the wall to which the shelving is to be connected.

The overall stability of the wall must be checked, considering a combination of traction loads acting on all the anchor points. The total traction load must be considered equal to 2% of the total load, and the loads acting on individual anchor points can be considered to be identical.

SUPER 1-2-3 UPRIGHTS

Super 1-2-3 shelving uprights are cold formed profiles; they are designed to support beams and accessories and they differ in terms of load bearing capacity.

The uprights are available in different variety of heights ranging from 1576mm to 5008mm.

The order codes for uprights are listed in Tab. 1.

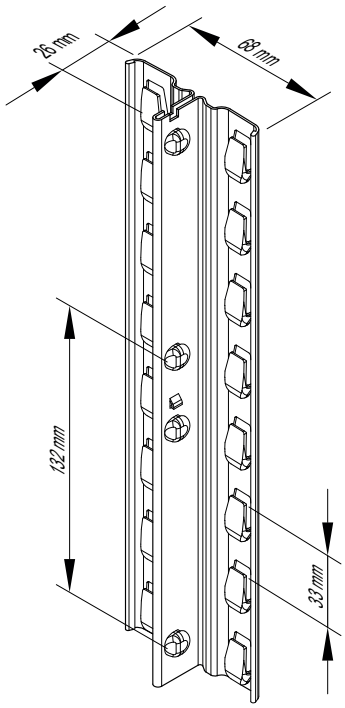


Fig. 1

Super 1-2-3 uprights order codes

Height [mm]	S0	S1	S2	S3
1576	10510.95	-	-	-
1840	10520.95	-	-	-
1972	10530.95	10001.95	11001.95	12001.95
2500	-	10004.95	11004.95	12004.95
3028	-	10007.95	11007.95	12007.95
3424	-	-	11010.95	12010.95
3952	-	-	-	12013.95
4480	-	-	-	12016.95
5008	-	-	-	12019.95

Tab. 1

SUPER 1-2-3 FRAME BRACING

Frame bracing absorbs the horizontal loads acting on the shelving. Super 1-2-3 standard frame bracing profiles are used for frames ranging from 250mm to 800mm and are fit for shelvings and two-tier installations in non seismic conditions.

Two standard elements are used for the frame bracing: spacer bars and diagonals (Fig. 2). Order codes for standard depth frames are listed in Tab. 1.

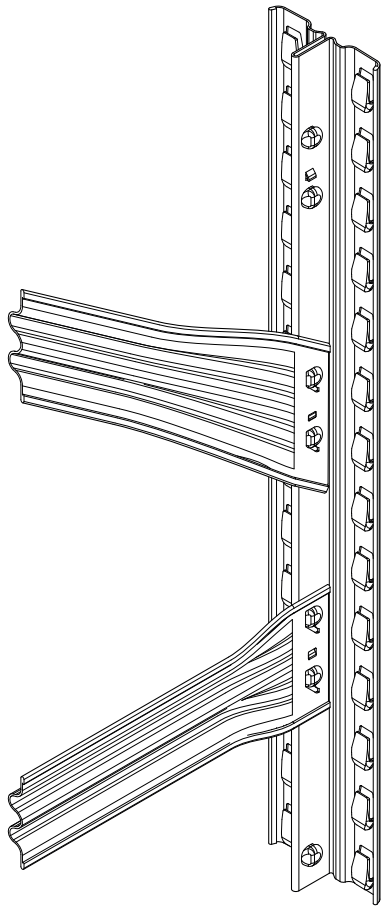


Fig. 1

Super 1-2-3 frame bracing profile order codes

Nominal frame depth [mm]	Spacer	Diagonal
250	-	43020.95
320	41001.95	46001.95
400	41004.95	46004.95
450	41005.95	46005.95
500	41007.95	46007.95
600	41010.95	46010.95
700	41013.95	46013.95
800	41016.95	46016.95

Tab. 1

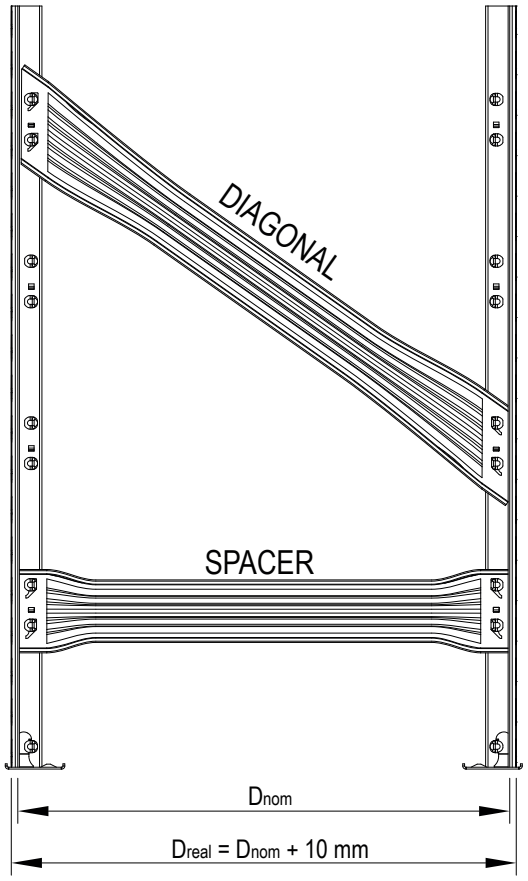


Fig. 2

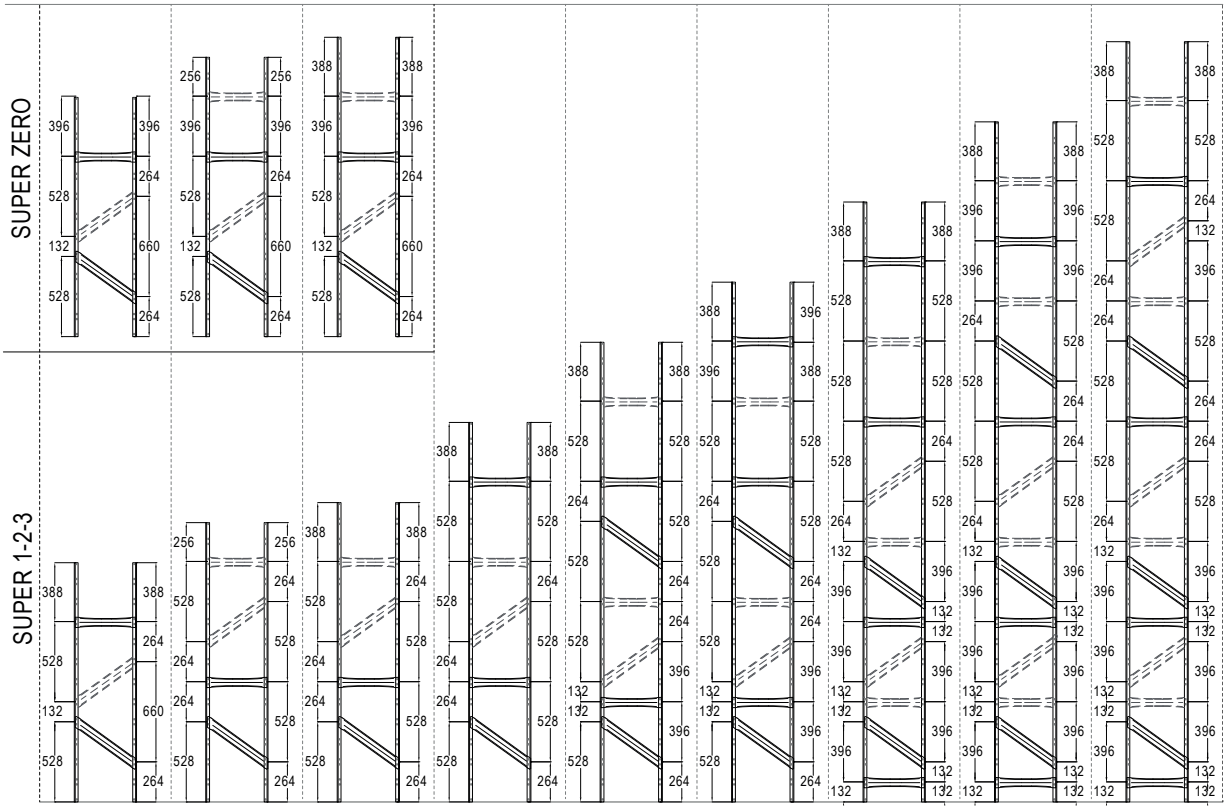
COMPLETE FRAMES WITH STANDARD BRACING CONFIGURATION

The macrocodes for complete frames include the uprights and frame bracing components required to assemble frames in standard depths ranging from 320mm to 800mm, and the "SLIM" depth of 250mm.

The frame bracing geometry depends on the upright type and height and on frame depth (Fig. 1, Fig. 2). Standard frame bracing configuration is fit for shelving without suspended walkways or flush floors.

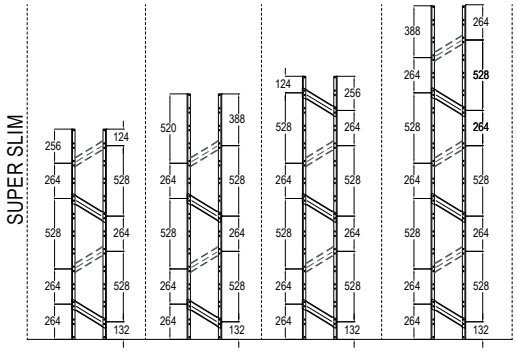
For correct assembly please refer to document code ISTM-027.

The number of frame bracing elements for every height is listed in Tab. 1. frame macrocodes are listed in the subsequent tables.



Frame height [mm]		1576	1840	1972	2500	3028	3424	3952	4480	5008
Upright	S0	O	O	O	-	-	-	-	-	-
	S1	-	-	O	O	O	-	-	-	-
	S2	-	-	O	O	O	O	-	-	-
	S3	-	-	O	O	O	O	O	O	O

Fig. 1



Frame height [mm]		1576	1840	1972	2500
Upright	S0	O	O	O	-
	S1	-	-	O	O

Fig. 2

Super 1-2-3 frames: number of bracing components

Frame depth (mm)	Standard								Slim			
Frame height (mm)	1576	1840	1972	2500	3028	3424	3952	4480	5008	1576	1840	1972	2500
Spacers	1	2	2	3	4	5	7	8	8	-	-	-	-
Diagonals	2	2	2	2	3	3	4	5	6	4	4	5	6

Tab. 1

S0 frames

Height [mm]	Nominal frame depth [mm]							
	250	320	400	450	500	600	700	800
1576	70300.95	76001.95	76004.95	76005.95	76007.95	76010.95	76013.95	76016.95
1840	70303.95	76019.95	76022.95	76023.95	76025.95	76028.95	76031.95	76034.95
1972	70306.95	76037.95	76040.95	76041.95	76043.95	76046.95	76049.95	76052.95

Tab. 2

S1 frames

Height [mm]	Nominal frame depth [mm]							
	250	320	400	450	500	600	700	800
1972	70309.95	77037.95	77040.95	77041.95	77043.95	77046.95	77049.95	77052.95
2500	70312.95	77055.95	77058.95	77059.95	77061.95	77064.95	77067.95	77070.95
3028	-	77073.95	77076.95	77077.95	77079.95	77082.95	77085.95	77088.95

Tab. 3

S2 frames

Height [mm]	Nominal frame depth [mm]						
	320	400	450	500	600	700	800
1972	78037.95	78040.95	78041.95	78043.95	78046.95	78049.95	78052.95
2500	78055.95	78058.95	78059.95	78061.95	78064.95	78067.95	78070.95
3028	78073.95	78076.95	78077.95	78079.95	78082.95	78085.95	78088.95
3424	78091.95	78094.95	78095.95	78097.95	78100.95	78103.95	78106.95

Tab. 4

S3 frames

Height [mm]	Nominal frame depth [mm]						
	320	400	450	500	600	700	800
1972	79037.95	79040.95	79041.95	79043.95	79046.95	79049.95	79052.95
2500	79055.95	79058.95	79059.95	79061.95	79064.95	79067.95	79070.95
3028	79073.95	79076.95	79077.95	79079.95	79082.95	79085.95	79088.95
3424	79091.95	79094.95	79095.95	79097.95	79100.95	79103.95	79106.95
3952	79109.95	79112.95	79113.95	79115.95	79118.95	79121.95	79124.95
4480	79127.95	79130.95	79131.95	79133.95	79136.95	79139.95	79142.95
5008	79145.95	79148.95	79149.95	79151.95	79154.95	79157.95	79160.95

Tab. 5

FRAMES WITH REINFORCED BRACING CONFIGURATION

Frames with reinforced bracing configuration are mandatory at least up to the floor level for two-tier configurations, and may be adopted in special cases in which an improved frame stiffness is desired.

Due to the high number of possible variations, order macrocodes are not defined for frames with reinforced bracing configurations.

However, the maximum number of bracing elements for any given frame height is listed in Tab. 1.

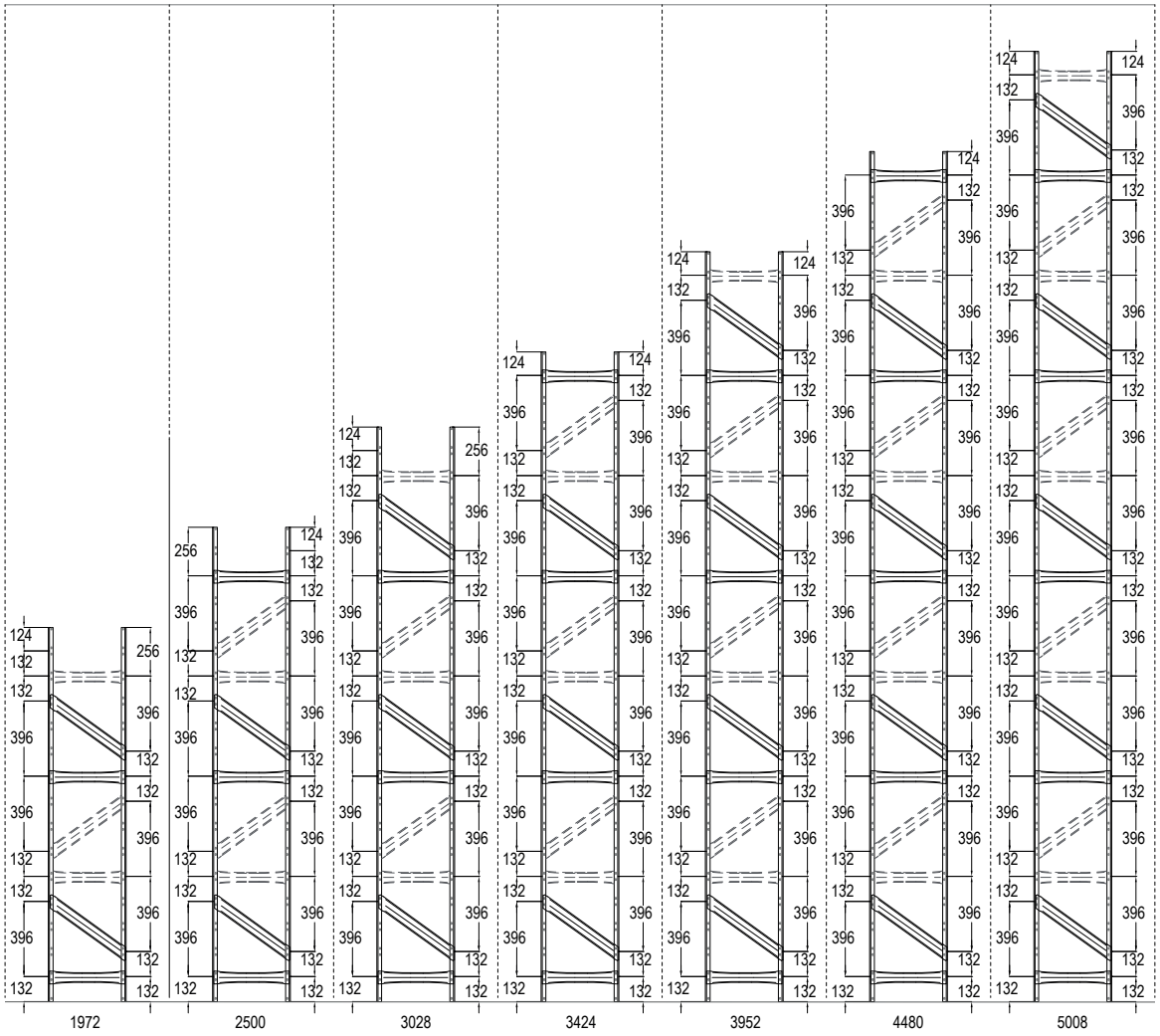


Fig. 1

Super 1-2-3 frames: number of bracing components - reinforced configuration

Frame height (mm)	1972	2500	3028	3424	3952	4480	5008
Spacers	4	5	6	7	8	9	10
Diagonals	3	4	5	6	7	8	9

Tab. 1

SUPER 1-2-3 BASE PLATES & ANCHOR BOLTS

PLASTIC BASE PLATE

The plastic base plate can be used within the geometrical limitations shown in Data sheet 05/10/05 for frames not anchored to floor. When plastic base plates are used, the maximum frame load bearing capacity is 500daN, in static conditions and on a smooth floor slab.

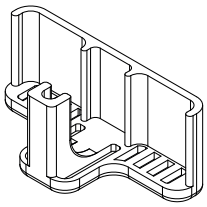


Fig. 1

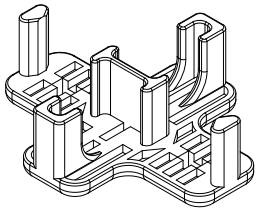


Fig. 2

Codes for plastic base plates

Code	Description
68055.98	Plastic base plate / top cap for Super 1-2-3 upright
67005.98	Plastic base plate / top cap for Super 1-2-3 double uprights

Tab. 1

SUPER 1-2-3 METAL BASE PLATE

The metal base plate is suitable for static loading conditions subject primarily to compression and shear loads; the ability to withstand traction is limited exclusively to the anti-tipping safety function. Shims are used to level the frame.

The metal base plate is installed with the anchor bolt holes facing the inside of the frame (Fig. 4 - Fig. 5).

Fixing of the standard metal base plate requires at least one anchor bolt.

The metal base plate can be used only on frames up to 3424mm, with height:base ratio up to 6 and without suspended walkways. All other applications mandate the use of the heavy duty base plates.

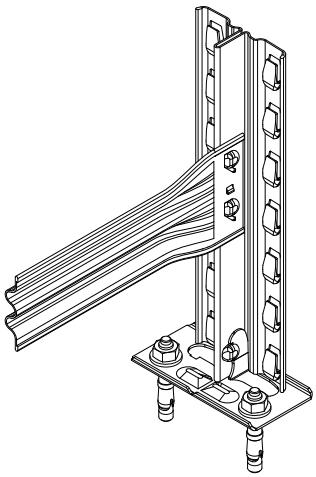


Fig. 4

Metal base plate order codes (Fig. 3)

Pos.	Code	Description
A	67007.95	Super 1-2-3 metal base plate
B1	AL210015.95	Universal S123/US base plate shim - 1,45mm
B2	AL210016.95	Universal S123/US base plate shim - 1mm

Tab. 2

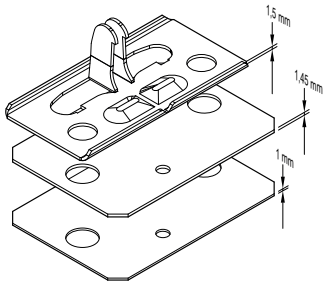


Fig. 3

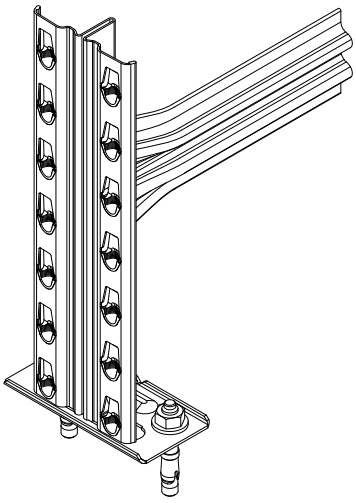


Fig. 5

SUPER 1-2-3 HEAVY DUTY BASE PLATE

The heavy duty base plate is suitable for loading conditions with moderate tension (low seismicity, slender frames, two-tier installations). The application of the heavy duty base plate is mandatory in the following cases:

- Flush or suspended walkway two-tier installations;
- Shelving subjected to significant shear or traction forces;
- Shelving with frame heights up to 3424mm with height : base ratio higher than 6;
- Shelving higher than 3424mm.

It is mandatory to apply a Super 1-2-3 spacer at the base of all frames that apply the heavy duty base plate. The macrocodes of frame heights starting fro 3952mm include a ground level Super 1-2-3 spacer.

New heavy duty base plate code (Fig. 6)

Pos.	Code	Description
A+B	AL000012.95	Super 1-2-3 heavy duty base plate
C	AL210015.95	Universal S123/US base plate shim - 1,45mm
D	AL210016.95	Universal S123/US base plate shim - 1mm

Tab. 3

Super 1-2-3 heavy duty base plate assembly Macrocode AL000012.95 (Fig. 6)

Pos.	Code	Description	Qty.
A	AL000011/1.95	Base plate reinf. bracket S123-US-UH	1
B	67007.95	Super 1-2-3 metal base plate	1

Tab. 4

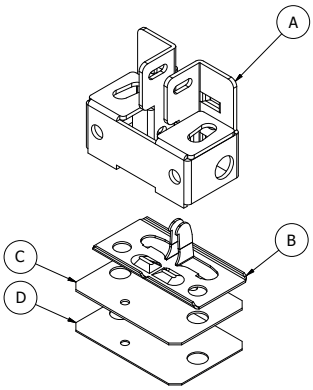


Fig. 6

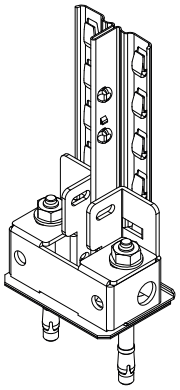
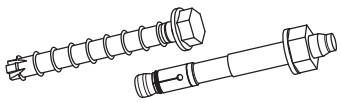


Fig. 7

ANCHOR BOLTS

Correct fixing to the floor requires anchor bolts to be selected from among those listed in Tab. 5.



Anchor bolts for Super 1-2-3 base plate

Code	Description	Permitted models	Certifications[1]	Maximum shimming [mm]	Compatibility	
					67007.95	AL000012.95
00040.20	Expansion anchor bolt M8	Bossong NWS-CE 8-60 Hilti HSA M8x55	EAD 330008-02-0601 Static loads, non cracked concrete	4	Y	N
VI000196.20	Screw anchor bolt M8	Hilti HUS3-H M8x75	EAD 330232-02-0601 Seismic loads, C1-C2	4	Y	N
VI000301.20	Expansion anchor bolt M10	Hilti HSA M10x110	EAD 330008-02-0601 Static loads, non cracked concrete	5	N	Y
VI000289.20	Expansion anchor bolt M10	Hilti HST3 M10x130	EAD 330232-02-0601 Seismic loads, C1-C2	5	N	Y
VI000302.20	Screw anchor bolt M8	Hilti HUS3-H M8x120	EAD 330232-02-0601 Seismic loads, C1-C2	5	N	Y

[1] For detailed information on certifications, conditions, methods of installation and performance, refer to the documentation of the individual products.

Tab. 5

FRAME COMPLETION ACCESSORIES

UPRIGHT TOP CAP

The plastic base plates may also be used as upright top caps and are available for both single uprights and for coupled uprights.

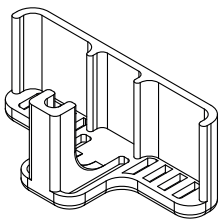


Fig. 1

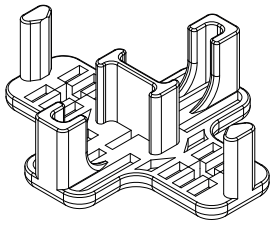


Fig. 2

Order codes for upright top caps

Code	Description
68055.98	Plastic base plate / top cap for Super 1-2-3 upright
67005.98	Plastic base plate / top cap for Super 1-2-3 double uprights

Tab. 1

BACK TO BACK FRAME CLAMP

Back to back frame clamps are used to connect the rear uprights of double side shelving. The standard connection (Fig. 3) is made by installing a single T-section support bracket on the first upright, and then bending its extremities to lock the adjoining uprights (Fig. 4, Fig. 5).

Back to back clamps are placed at the top of the upright and at 1500mm centers in height for frames higher than 1972mm.

Back to back frame clamp for Super 1-2-3 uprights

Pos.	Code	Description	Qty.
A	67022.95	T-section support bracket	1

Tab. 2

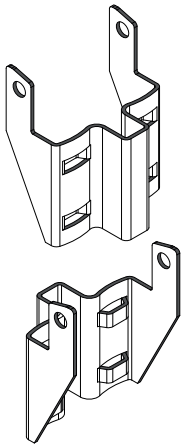


Fig. 3

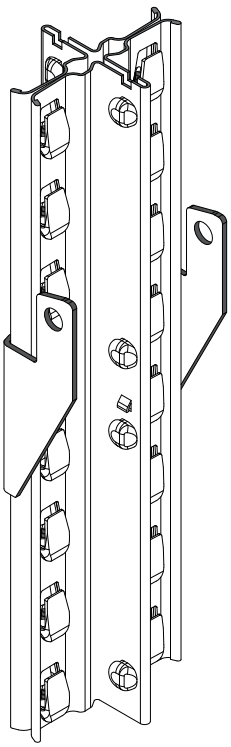


Fig. 4

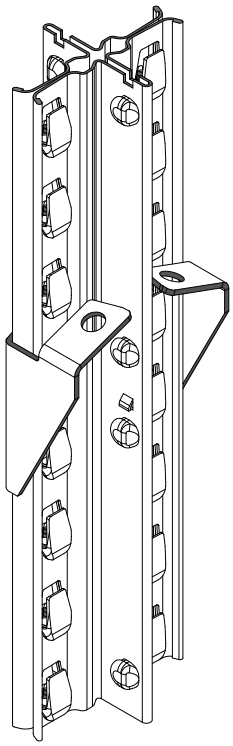


Fig. 5

TOP TIE

The top tie between frames aligned at each side of an aisle is created with a Super 1-2-3 row spacer.

Order codes for top ties

Code	Description	Length [mm]
67400.95	Super 1-2-3 row spacer	W_{aisle}

Note: each top tie requires two safety clips, code 67016.95 (Fig. 7).

Tab. 3

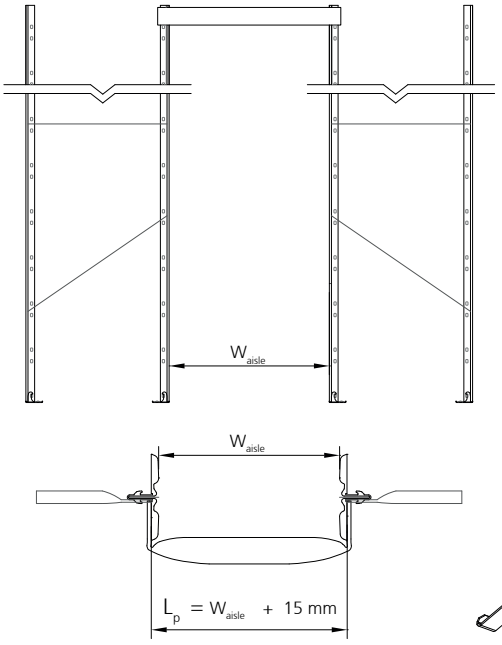


Fig. 6

Fig. 7

WALL FIXING

The wall fixing bracket is used to secure a Super 1-2-3 upright to a wall. Standard fixings on concrete walls call for two M8 expansion anchor bolts. The shelving may be fixed to other surfaces using suitable anchor bolts of up to M8 in diameter.

The prescriptions listed in Data sheet 05/10/10 must always be fulfilled, both in regard to the choice of suitable anchor bolts and also the suitability of the walls.

Wall fixing accessories

Pos.	Code	Description	Qty.
A	65022.95	Wall fixing bracket	1
B	00040.20	Expansion anchor bolt M8	2

Tab. 4

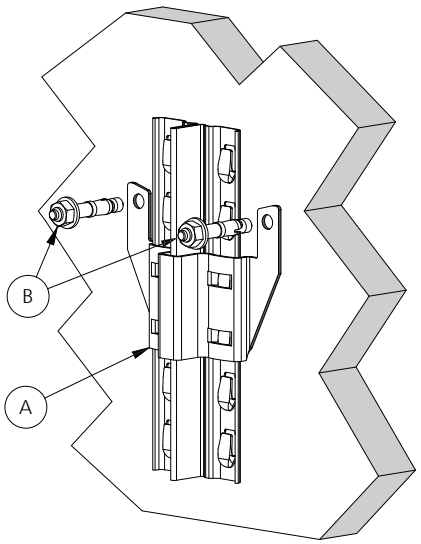


Fig. 8

S0/S1/S2/S3 BEAMS

S0/S1/S2/S3 beams are available in the standard nominal sizes, codes are summarised in Tab. 1. The order length of special length beams is the nominal length of the bay. The association between the order length and other bay parameters are illustrated in Fig. 2.

The beams are compatible with a vast range of accessories. The load bearing capacity of the loading level also depends on the accessories employed, but in any event it must comply with the maximum permissible load per pair of beams shown in Tab. 3.

Use of the safety clip is mandatory to guarantee both the safety of users while handling goods and maintenance of the correct coupling between beam and upright, which guarantees the stability of the shelving.

It is recommended to adopt the compact safety clip (Fig. 3) for the clear advantages of application: it can be applied to back-to-back uprights, it can be assembled with or without the presence of shelf panels or other bay accessories, and it can be applied to top level beams without interfering with the assembly of the top cap.

The external safety clip (Fig. 4) cannot be installed on back-to-back uprights, and interferes with the top cap if applied to beam levels flush to the upright.

The plastic safety clip (Fig. 5) is fit for back-to-back uprights, this is installed above the beam,for this reason beams using this safety clip cannot be placed flush at the upright cut.

The safety clip must be fitted to both ends of the beam.

The safety clips are not included in beam codes or shelf macrocodes and must therefore be ordered separately.

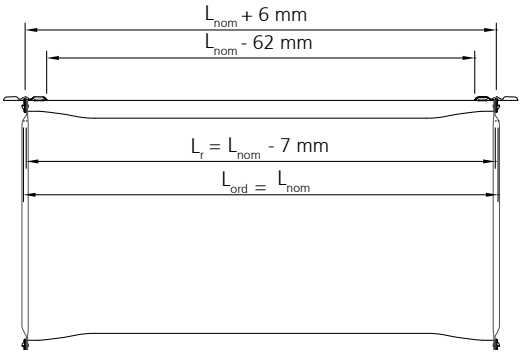


Fig. 1

Order codes for S0/S1/S2/S3 beams

Length [mm]	S0	S1	S2	S3
450	30010L.95	-	-	-
600	30000L.95	30000.95	-	-
900	30001L.95	30001.95	31501.95	32501.95
1050	30003L.95	30003.95	31503.95	32503.95
1200	30004L.95	30004.95	31504.95	32504.95
1350	-	30005.95	31505.95	32505.95
1500	-	30007.95	31507.95	32507.95
1650	-	30008.95	31508.95	32508.95
1800	-	-	-	32510.95
SPEC.	99030.95	99032.95	99034.95	99037.95

Note: each beam requires two safety clips (Tab. 2)

Tab. 1

Beam safety clips - order codes

Code	Description
67016.95	Beam retaining clip - Super 1-2-3
67013.95	Compact beam retaining clip - Super 1-2-3
67017.98	Plastic beam security clip

Note: each beam requires two safety clips

Tab. 2

Load bearing capacity of S0/S1/S2/S3 beams

Distributed load per pair of beams

Length [mm]	S0 [daN]	S1 [daN]	S2 [daN]	S3 [daN]
450	200	-	-	-
600	200	265	-	-
900	200	265	390	450
1050	170	230	335	385
1200	150	200	275	320
1350	-	160	215	255
1500	-	130	175	205
1650	-	110	145	170
1800	-	-	-	140

Notes:

Max load bearing capacity on S0 frames: 350daN

Tab. 3

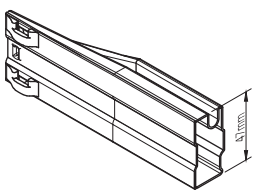
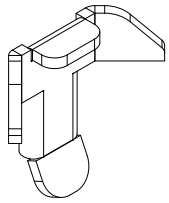
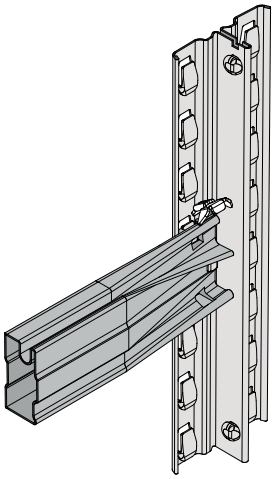


Fig. 2

Compact safety clip





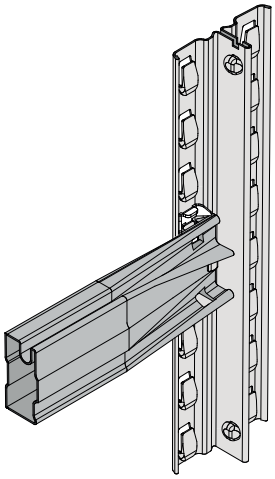
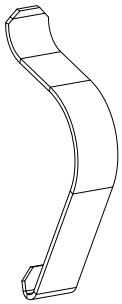
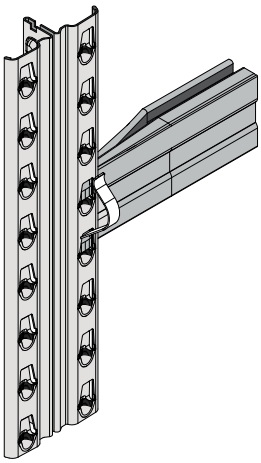
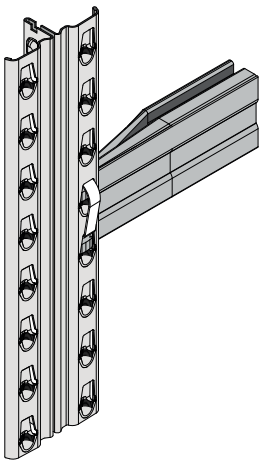


Fig. 3

External safety clip







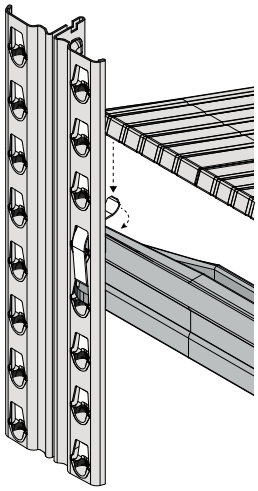
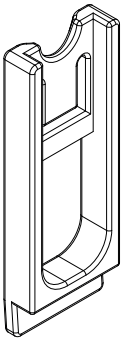
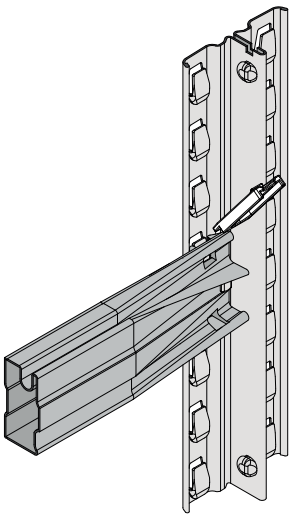


Fig. 4

Plastic safety clip





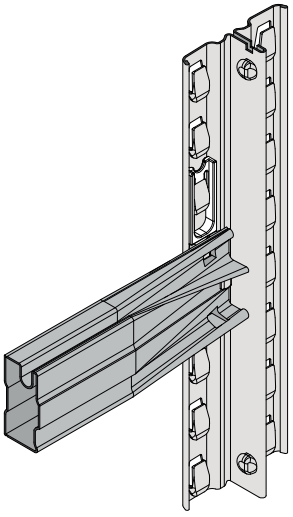


Fig. 5

S1G/S2G/S3G BEAMS

S1G/S2G/S3G beams are available in the standard nominal sizes, codes are summarised in Tab. 1. The order length of special length beams is the nominal length of the bay. The association between the order length and other bay parameters are illustrated in Fig. 2.

The beams are compatible with a vast range of accessories. The load bearing capacity of the loading level also depends on the accessories employed, but in any event it must comply with the maximum permissible load per pair of beams shown in Tab. 3.

Use of the safety clip is mandatory to guarantee both the safety of users while handling goods and maintenance of the correct coupling between beam and upright, which guarantees the stability of the shelving.

It is recommended to adopt the compact safety clip (Fig. 3) for the clear advantages of application: it can be applied to back-to-back uprights, it can be assembled with or without the presence of shelf panels or other bay accessories, and it can be applied to top level beams without interfering with the assembly of the top cap.

The external safety clip (Fig. 4) cannot be installed on back-to-back uprights, and interferes with the top cap if applied to beam levels flush to the upright.

The plastic safety clip (Fig. 5) is fit for back-to-back uprights, this is installed above the beam,for this reason beams using this safety clip cannot be placed flush at the upright cut.

The safety clip must be fitted to both ends of the beam.

The safety clips are not included in beam codes or shelf macrocodes and must therefore be ordered separately.

Order codes for SG beams

Length [mm]	S1G	S2G	S3G
1500	32604.95	34004.95	35004.95
1800	32607.95	34007.95	35007.95
SPEC.	99039.95	99040.95	99041.95

Note: each beam requires two safety clips (Tab. 2).

Tab.1

Beam safety clips - order codes

Code	Description
67016.95	Beam retaining clip - Super 1-2-3
67013.95	Compact beam retaining clip - Super 1-2-3
67017.98	Plastic beam security clip

Note: each beam requires two safety clips

Tab. 2

Load bearing capacity of SG beams

Distributed load per pair of beams

Length [mm]	S1G [daN]	S2G [daN]	S3G [daN]
1500	350	520	640
1800	310	430	530

Note: Max load bearing capacity on S0 frames: 350daN
Max load bearing capacity on S1 frames: 500daN

Tab. 3

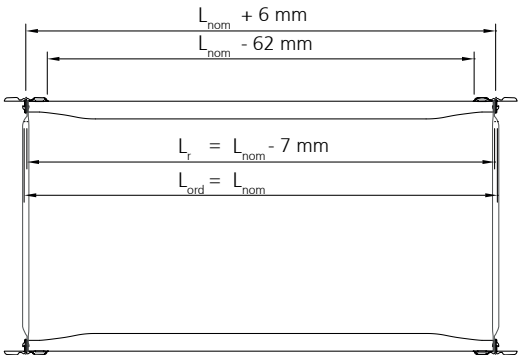


Fig.1

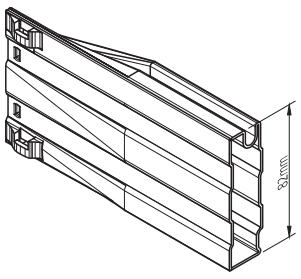
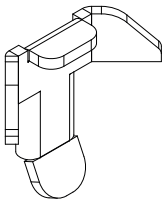
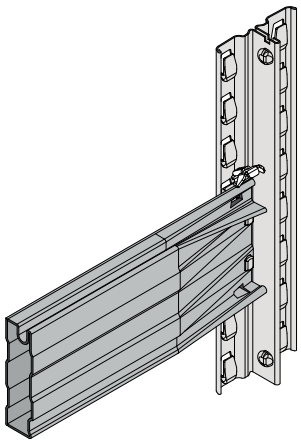


Fig.2

Compact safety clip





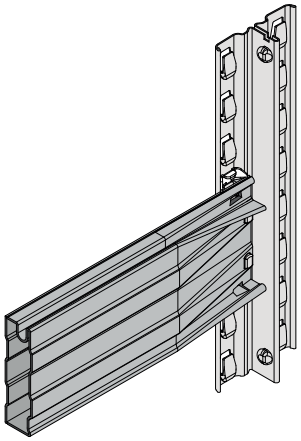
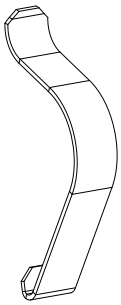
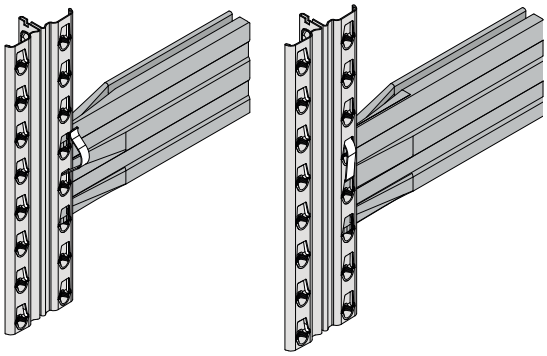


Fig. 3

External safety clip





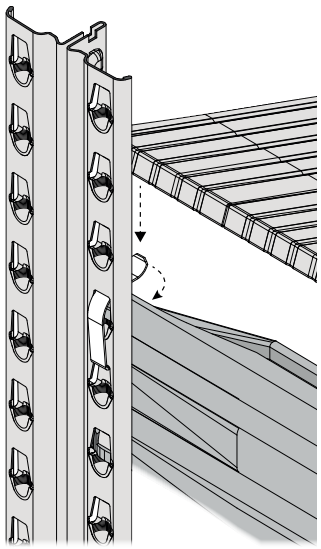
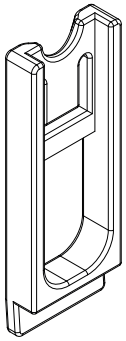
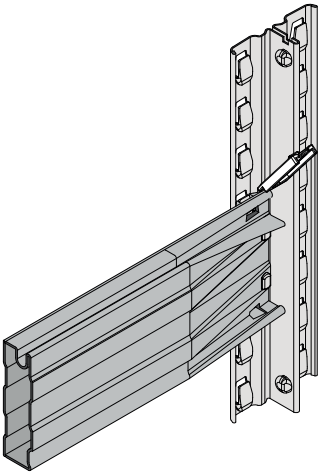


Fig. 4

Plastic safety clip





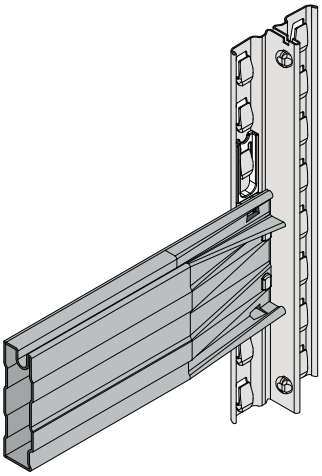


Fig. 5

H12 STEEL PANELS

H12 steel panels are available in three widths: 450mm, 600mm and 900mm. The combination of steel panels of different widths makes it possible to create shelf levels of various standard bay lengths.

The steel panels are available for nominal depths ranging from 250mm to 700mm. They can be ordered for special depths, with order lengths based on the frame dimensions (Fig. 2).

The load bearing capacity of a complete shelf is equal to the lower value of the beams load bearing capacity and the sum of the load bearing capacities of the steel panels employed to create the complete shelf.

The load bearing capacities of individual steel panels are summarised in Tab. 2.

Macrocodes are available for complete shelves, composed of standard S0/S1/S2/S3 and SG series beams and H12 steel panels, for standard frame depths up to 700mm and for different bay lengths (Tab. 3).

The load bearing capacities of complete shelves for which macrocodes exist are summarised in Tab. 4.

The load bearing capacity tables of all complete shelves that can be created by combining METALSISTEM beams and H12 steel panels are listed in Data sheet 15/10/05.

Note: 450mm wide panels are obtained by cutting a 900mm panel in half, therefore one of the edges is locally more deformable than the opposite edge. It is advisable to use 450mm wide panels only for completing shelves formed with 600mm and 900mm wide panels, and to orientate the panel in order to minimize the effects of the deformable edge considering the type of stored goods.

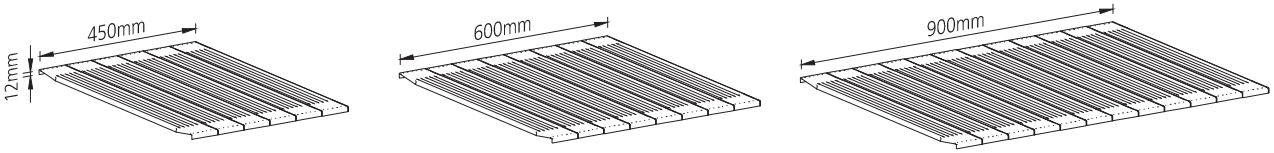


Fig. 1

Order codes for H12 steel panels

Nominal frame depth [mm]	H12 450mm [daN]	H12 600mm [daN]	H12 900mm [daN]
250	51700.95	51100.95	51600.95
320	51701.95	51101.95	51601.95
400	51704.95	51104.95	51604.95
450	51705.95	51105.95	51605.95
500	51707.95	51107.95	51607.95
600	51710.95	51110.95	51610.95
700	51713.95	51113.95	51613.95
Spec.	99802.95	99053.95	99057.95
300 *	51720.95	51120.95	51620.95

Note: the steel panels may be secured to the beams using the appropriate safety clips (Tab. 3).

* The 300mm nominal depth is used for beam on ground applications of 400mm frames (refer to Hand Loaded Shelve Accessories manual for the application).

Tab. 1

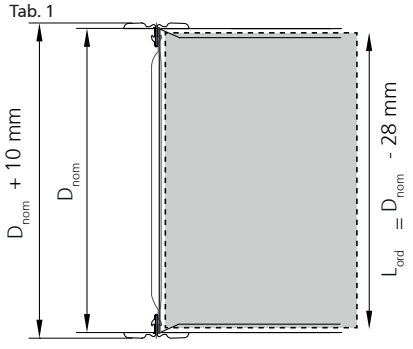


Fig. 2

Load bearing capacity of H12 steel panels

Nominal frame depth [mm]	H12 450mm [daN]	H12 600mm [daN]	H12 900mm [daN]
250	125	160	230
320	125	160	230
400	95	130	180
450	90	120	170
500	80	110	150
600	75	100	140
700	65	85	130
300	125	160	230

Tab. 2

Order codes for shelf safety clips

Code	Description	Ref.
AL210005.95	Shelf safety clip - Super 1-2-3 beams	Fig. 3
AL210008.95	Shelf safety clip - SG beams	Fig. 4

Tab. 3

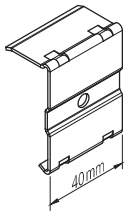


Fig. 3

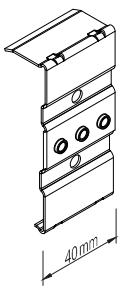


Fig. 4

Order macrocodes for complete H12 shelves

Depth [mm]	Length [mm]	Beams				
		S0 [daN]	S1 [daN]	S2 [daN]	S3 [daN]	S1G [daN]
320	900	80001.95	80501.95	81001.95	82001.95	-
	1050	80014.95	-	-	-	-
	1200	80019.95	80519.95	81019.95	82019.95	-
	1500	-	80537.95	81037.95	82037.95	83116.95
	1800	-	-	-	82055.95	83131.95
400	900	80004.95	80504.95	81004.95	82004.95	-
	1050	80015.95	-	-	-	-
	1200	80022.95	80522.95	81022.95	82022.95	-
	1500	-	80540.95	81040.95	82040.95	83119.95
	1800	-	-	-	82058.95	83134.95
500	900	80007.95	80507.95	81007.95	82007.95	-
	1050	80016.95	-	-	-	-
	1200	80025.95	80525.95	81025.95	82025.95	-
	1500	-	80543.95	81043.95	82043.95	83122.95
	1800	-	-	-	82061.95	83137.95
600	900	80010.95	80510.95	81010.95	82010.95	-
	1050	80017.95	-	-	-	-
	1200	80028.95	80528.95	81028.95	82028.95	-
	1500	-	80546.95	81046.95	82046.95	83125.95
	1800	-	-	-	82064.95	83140.95
700	900	80013.95	80513.95	81013.95	82013.95	-
	1050	80018.95	-	-	-	-
	1200	80031.95	80531.95	81031.95	82031.95	-
	1500	-	80549.95	81049.95	82049.95	83140.95
	1800	-	-	-	82067.95	83143.95

Tab. 3

Load bearing capacity of complete H12 shelves (uniformly distributed load)

Depth [mm]	Length [mm]	Beams				
		S0 [daN]	S1 [daN]	S2 [daN]	S3 [daN]	S1G [daN]
320	900	200	230	230	230	-
	1050	170	-	-	-	-
	1200	150	200	275	320	-
	1500	-	130	175	205	350
	1800	-	-	-	140	310
400	900	180	180	180	180	-
	1050	170	-	-	-	-
	1200	150	200	260	260	-
	1500	-	130	175	205	310
	1800	-	-	-	140	310
500	900	150	150	150	150	-
	1050	170	-	-	-	-
	1200	150	200	220	220	-
	1500	-	130	175	205	260
	1800	-	-	-	140	280
600	900	140	140	140	140	-
	1050	170	-	-	-	-
	1200	150	200	200	200	-
	1500	-	130	175	205	240
	1800	-	-	-	140	280
700	900	130	130	130	130	-
	1050	150	-	-	-	-
	1200	150	170	170	170	-
	1500	-	130	175	205	215
	1800	-	-	-	140	260

Tab. 4

H25 STEEL PANELS

H25 steel panels have a standard width of 300mm, and are available in four load bearing capacity variants for nominal depths ranging from 400mm to 1200mm. They can be ordered for special depths, with order lengths based on the frame dimensions (Fig. 2).

The load bearing capacity of a complete shelf is equal to the lower value of the beams load bearing capacity and the sum of the load bearing capacities of the steel panels employed to create the complete shelf. The load bearing capacities of individual steel panels are summarised in Tab. 2.

Infill steel panels are available with 150mm and 200mm widths, making it possible to create bays of different lengths. There are macrocodes available for complete shelves, composed of standard S0/S1/S2/S3 and SG series beams and H25 steel planks, for the full range of frame depths up to 800mm and for different bay lengths (Tab. 5 - Tab. 7). The load bearing capacities of complete shelves for which macrocodes exist are summarised in Tab. 6 and Tab. 8.

The load bearing capacity tables of all complete shelves that can be created by combining METALSISTEM beams and H25 steel panels are listed in Data sheet 15/10/05.

Note: the infill steel panels must be used only to complete bays created with 300mm wide steel panels, keeping the infill end facing the frame. Complete bays cannot be created using infill steel planks. Specifically, 150mm steel panels feature an overhanging side edge having the exclusive function of closing the complete shelf. 150mm steel panels cannot be used with small size goods, which could deform the overhanging edge and tip over.

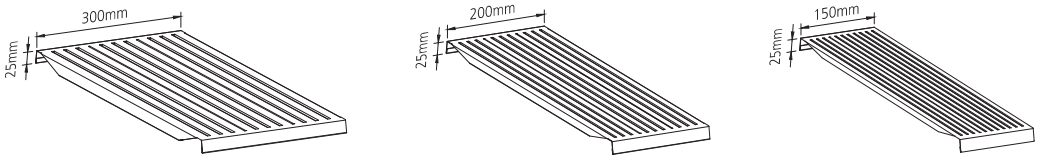


Fig. 1

H25 steel panels order codes

Nominal depth [mm]	H25/L	H25/A	H25/B	H25/C
400	52201.95	52301.95	52401.95	52501.95
450	52202.95	52302.95	52402.95	52502.95
500	52204.95	52304.95	52404.95	52504.95
600	52207.95	52307.95	52407.95	52507.95
700	52210.95	52310.95	52410.95	52510.95
800	52213.95	52313.95	52413.95	52513.95
900	-	-	52600.95	52630.95
1000	-	-	52602.95	52632.95
1100	-	-	52604.95	52634.95
1200	-	-	-	52636.95
Spec.	99063.95	99066.95	99069.95	99072.95

Note: the steel panels can be secured to the beams using safety clip code AL210005.95 (Fig. 3).

Tab. 1

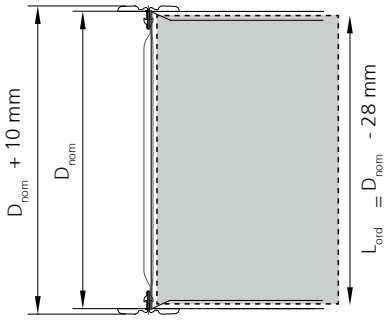


Fig. 2

Load bearing capacity of H25 steel panels

Nominal depth [mm]	H25/L [daN]	H25/A [daN]	H25/B [daN]	H25/C [daN]
400	140	185	235	280
450	120	165	205	280
500	105	145	180	280
600	85	115	145	245
700	75	100	125	205
800	60	85	105	175
900	-	75	95	155
1000	-	65	85	125
1100	-	60	75	100
1200	-	50	60	85

Tab. 2

Order codes for shelf safety clips

Code	Description	Ref.
AL210005.95	Shelf safety clip - Super 1-2-3 beams	Fig. 3
AL210008.95	Shelf safety clip - SG beams	Fig. 4

Tab. 3

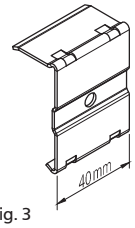


Fig. 3

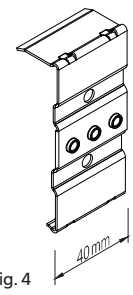


Fig. 4

H25 steel panels order codes - 150mm infill panels

Nominal depth [mm]	H25/A	H25/B	H25/C
400	-	52371.95	-
450	-	52372.95	-
500	-	52374.95	-
600	-	52377.95	-
700	-	52380.95	-
800	-	52383.95	-
SPEC.	-	99070.95	-

Tab. 3

H25 steel panels order codes - 200mm infill panels

Nominal depth [mm]	H25/A	H25/B	H25/C
400	52290.95	-	52490.95
450	52291.95	-	52491.95
500	52292.95	-	52492.95
600	52294.95	-	52494.95
700	52296.95	-	52496.95
800	52298.95	-	52498.95
SPEC.	99067.95	99068.95	99073.95

Tab. 4

Order codes for complete H25/A shelves

Depth [mm]	Length [mm]	Beams						
		S0	S1	S2	S3	S1G	S2G	S3G
400	900	80004A.95	80504A.95	81504A.95	82504A.95	-	-	-
	1200	80022A.95	80522A.95	81522A.95	82522A.95	-	-	-
	1500	-	80540A.95	81540A.95	82540A.95	83340A.95	83540A.95	84540A.95
	1800	-	-	-	82564A.95	83364A.95	83564A.95	84564A.95
500	900	80007A.95	80507A.95	81507A.95	82507A.95	-	-	-
	1200	80025A.95	80525A.95	81525A.95	82525A.95	-	-	-
	1500	-	80543A.95	81543A.95	82543A.95	83343A.95	83543A.95	84543A.95
	1800	-	-	-	82567A.95	83367A.95	83567A.95	84567A.95
600	900	80010A.95	80510A.95	81510A.95	82510A.95	-	-	-
	1200	80028A.95	80528A.95	81528A.95	82528A.95	-	-	-
	1500	-	80546A.95	81546A.95	82546A.95	83346A.95	83546A.95	84546A.95
	1800	-	-	-	82570A.95	83370A.95	83570A.95	84570A.95
700	900	80013A.95	80513A.95	81513A.95	82513A.95	-	-	-
	1200	80031A.95	80531A.95	81531A.95	82531A.95	-	-	-
	1500	-	80549A.95	81549A.95	82549A.95	83349A.95	83549A.95	84549A.95
	1800	-	-	-	82573A.95	83373A.95	83573A.95	84573A.95
800	900	80016A.95	80516A.95	81516A.95	82516A.95	-	-	-
	1200	80034A.95	80534A.95	81534A.95	82534A.95	-	-	-
	1500	-	80552A.95	81552A.95	82552A.95	83352A.95	83552A.95	84552A.95
	1800	-	-	-	-	-	-	-

Tab. 5

Load bearing capacity of complete H25/A shelves

Depth [mm]	Length [mm]	Beams						
		S0	S1	S2	S3	S1G	S2G	S3G
400	900	200	265	390	450	-	-	-
	1200	150	200	275	320	-	-	-
	1500	-	130	175	205	350	520	640
	1800	-	-	-	140	310	430	530
500	900	200	265	390	435	-	-	-
	1200	150	200	275	320	-	-	-
	1500	-	130	175	205	350	520	640
	1800	-	-	-	140	310	430	530
600	900	200	265	345	345	-	-	-
	1200	150	200	275	320	-	-	-
	1500	-	130	175	205	350	520	575
	1800	-	-	-	140	310	430	530
700	900	200	265	300	300	-	-	-
	1200	150	200	275	320	-	-	-
	1500	-	130	175	205	350	500	500
	1800	-	-	-	140	310	430	530
800	900	200	255	255	255	-	-	-
	1200	150	200	275	320	-	-	-
	1500	-	130	175	205	350	425	425
	1800	-	-	-	140	310	430	510

Tab. 6

Order codes for H25/B complete shelves

Depth [mm]	Length [mm]	S3G beams
400	900	-
	1200	-
	1500	84540B.95
	1800	84564B.95
500	900	-
	1200	-
	1500	84543B.95
	1800	84567B.95
600	900	-
	1200	-
	1500	84546B.95
	1800	84570B.95
700	900	-
	1200	-
	1500	84549B.95
	1800	84573B.95
800	900	-
	1200	-
	1500	84552B.95
	1800	-

Tab. 7

Load bearing capacity of H25/B complete shelves

Depth [mm]	Length [mm]	S3G beams
400	900	-
	1200	-
	1500	640
	1800	530
500	900	-
	1200	-
	1500	640
	1800	530
600	900	-
	1200	-
	1500	640
	1800	530
700	900	-
	1200	-
	1500	625
	1800	530
800	900	-
	1200	-
	1500	525
	1800	-

Tab. 8

H25 STEEL PANELS WITH 50% PERFORATION

H25 steel panels with 50% perforation permit the creation of loading surfaces that fulfil the water permeability that may be required in the design of installations that incorporate active fire extinguishing systems.

H25 steel panels with 50% perforation are available in two variants in the standard 300mm width, for nominal depths ranging from 400mm to 1000mm. They can be ordered for special depths, with order lengths based on the frame dimensions (Fig. 2).

The load bearing capacity of complete shelves is equal to the lower value of the beams load bearing capacity and the sum of the load bearing capacities of the steel panels employed to create the complete shelf. The load bearing capacities of individual steel panels are summarised in Tab. 2.

The load bearing capacities of all complete shelves that can be created by combining METALSISTEM beams and H25 steel panels with 50% perforation are listed in Data sheet 15/10/10.

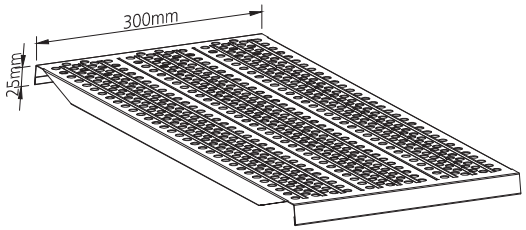


Fig. 1

Order codes for H25 steel panels with 50% perforation

Nominal depth [mm]	H25/C	H25/D
400	52521.95	52541.95
500	52524.95	52544.95
600	52527.95	52547.95
700	52530.95	52550.95
800	52533.95	52553.95
900	-	52700.95
1000	-	52702.95
Spec.	99075.95	99076.95

Note: the steel panels can be secured to the beams using safety clip code AL210005.95 (Fig. 3).

Tab. 1

Load bearing capacity of H25 steel panels with 50% perforation

Nominal depth [mm]	H25/C [daN]	H25/D [daN]
400	240	280
500	240	280
600	195	220
700	140	155
800	105	115
900	80	90
1000	65	70
1100	50	60
1200	45	50

Tab. 2

Order codes for shelf safety clips

Code	Description	Ref.
AL210005.95	Shelf safety clip - Super 1-2-3 beams	Fig. 3
AL210008.95	Shelf safety clip - SG beams	Fig. 4

Tab. 3

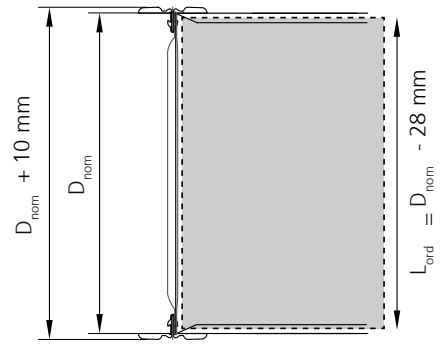


Fig. 2

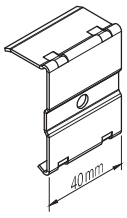


Fig. 3

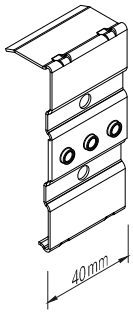


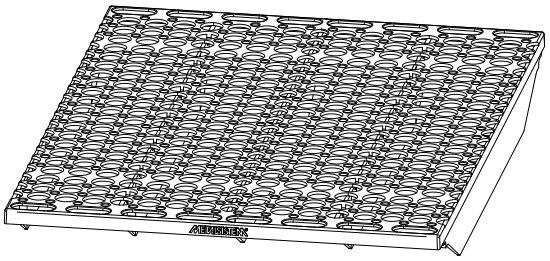
Fig. 4

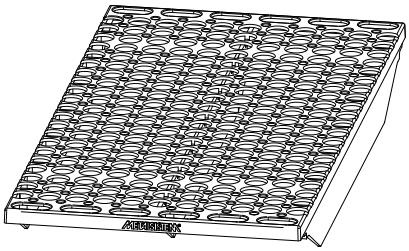
PLASTIC SHELF PANELS

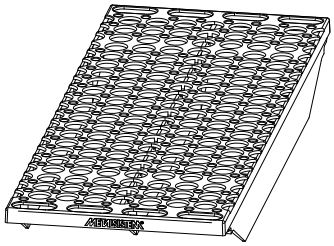
Plastic panels contain perforations that cover 50% of the top surface, are removable and washed with ease. These are fabricated from RoHS certified raw material which is fit for application in food environments. Panels are also available in a light green coloured "FROST" variant suited for applications in sub zero environments.

Plastic shelf panels are 300mm wide and are available in standard depths ranging from 320 to 600mm. 150mm and 200mm compensator panels are also available in standard depths ranging up to 500mm

Load bearing capacities are specialized for high planarity and low planarity applications. High planarity load bearing capacity is mandatory whenever the stored goods are sensible to the shelf deformation (eg. bottles and generally high and tight unit loads), and in applications with demanding aesthetic requirements. Low planarity load bearing capacity can be adopted whenever the deformation of the panel is not an issue, both functionally and aesthetically.







Plastic shelf panels order codes

Depth [mm]	Width [mm]	Type and colour						
		Standard						Frost
		White	Yellow	Cyan	Blue	Dark green	Black	Green
320	300	PL30X32C1.98	PL30X32A1.98	PL30X32B1.98	PL30X32B2.98	PL30X32V1.98	PL30X32N1.98	PL30X32D1.98
	200	PL20X32C1.98	PL20X32A1.98	PL20X32B1.98	PL20X32B2.98	PL20X32V1.98	PL20X32N1.98	PL20X32D1.98
	150	PL15X32C1.98	PL15X32A1.98	PL15X32B1.98	PL15X32B2.98	PL15X32V1.98	PL15X32N1.98	PL15X32D1.98
400	300	PL30X40C1.98	PL30X40A1.98	PL30X40B1.98	PL30X40B2.98	PL30X40V1.98	PL30X40N1.98	PL30X40D1.98
	200	PL20X40C1.98	PL20X40A1.98	PL20X40B1.98	PL20X40B2.98	PL20X40V1.98	PL20X40N1.98	PL20X40D1.98
	150	PL15X40C1.98	PL15X40A1.98	PL15X40B1.98	PL15X40B2.98	PL15X40V1.98	PL15X40N1.98	PL15X40D1.98
500	300	PL30X50C1.98	PL30X50A1.98	PL30X50B1.98	PL30X50B2.98	PL30X50V1.98	PL30X50N1.98	PL30X50D1.98
	200	PL15X40C1.98	PL15X40A1.98	PL15X40B1.98	PL15X40B2.98	PL15X40V1.98	PL15X40N1.98	PL15X40D1.98
	150	PL15X50C1.98	PL15X50A1.98	PL15X50B1.98	PL15X50B2.98	PL15X50V1.98	PL15X50N1.98	PL15X50D1.98
600	300	PL30X60C1.98	PL30X60A1.98	PL30X60B1.98	PL30X60B2.98	PL30X60V1.98	PL30X60N1.98	-

Plastic shelf panels properties and load bearing capacity

Panel type	Depth [mm]	Application temperature	-30°C .. +0°C			+0°C .. +7°C			+7°C .. +30°C		
		Impact resistance	fitness for use	Load bearing capacity [daN] High planarity	Load bearing capacity [daN] Low planarity	fitness for use	Load bearing capacity [daN] High planarity	Load bearing capacity [daN] Low planarity	fitness for use	Load bearing capacity [daN] High planarity	Load bearing capacity [daN] Low planarity
Standard	320	***	*	-	-	**	18	23	***	35	45
	400	***	*	-	-	**	18	23	***	35	45
	500	**	*	-	-	**	13	23	***	25	45
	600	*	*	-	-	**	8	15	***	15	30
Frost	320	**	***	40	-	**	15	-	*	-	-
	400	**	***	40	-	**	15	-	*	-	-
	500	**	***	40	-	**	10	-	*	-	-

Impact resistance:

***	Good impact resistance: raw material guarantees good absorption capacity of the small impacts that may accidentally occur during usage.
**	Sufficient impact resistance: raw material, while maintaining moderate impact resistance, is more susceptible to damage due to repeated abuse.
*	Low impact resistance: raw material is optimised towards rigidity.

The impact resistance rating refers to optimal usage conditions for each shelf type, and can be severely degraded for applications in sub optimal conditions.

A good impact resistance rating does not allow the abuse of plastic panels which are not designed for high impact such as those deriving from heavy unit loads dropped on the shelf.

Fitness for use:

***	Ideal application temperature for the panel type: panel performances are maximized.
**	Panel performance start to degrade: the panel may still be used with reduced performance if the specific usage conditions are carefully evaluated (low loads, no risk of impacts during storage and retrieval of goods).
*	The panel suffer a severe performance degradation: application is in general not recommended.

High temperatures increase the plastic deformation, while low temperatures increase their brittleness.

The materials used in standard shelf panels are optimised for best performance at room temperature, while those used in FROST panels are optimised for temperatures lower than 0°C.

The application of panels outside their optimal temperature range could severely affect their performance.

SPINE AND HORIZONTAL BRACING

Introduction

Standard bracing of the Super 1-2-3 shelving is composed of independent modules that make it possible to stabilize individual shelving sides.

Each complete module is equipped with one or more spine bracing crosses connected to the rear uprights of the frames. Horizontal bracing crosses, designed to stabilize the front uprights of the frames, are mounted in correspondence with the spine bracing crosses connection points.

The shelving is correctly braced only if both the spine bracing stirrups and the horizontal bracing stirrups are installed.

The first cross can be anchored directly to the floor (examples in Fig. 1 and in Fig. 2) or connected to the uprights close to the base. Anchoring to the floor makes for easier installation of the bottom level.

The braced shelving must be anchored to the floor with metal base plates and expansion anchor bolts (Data sheet 10/05/30).

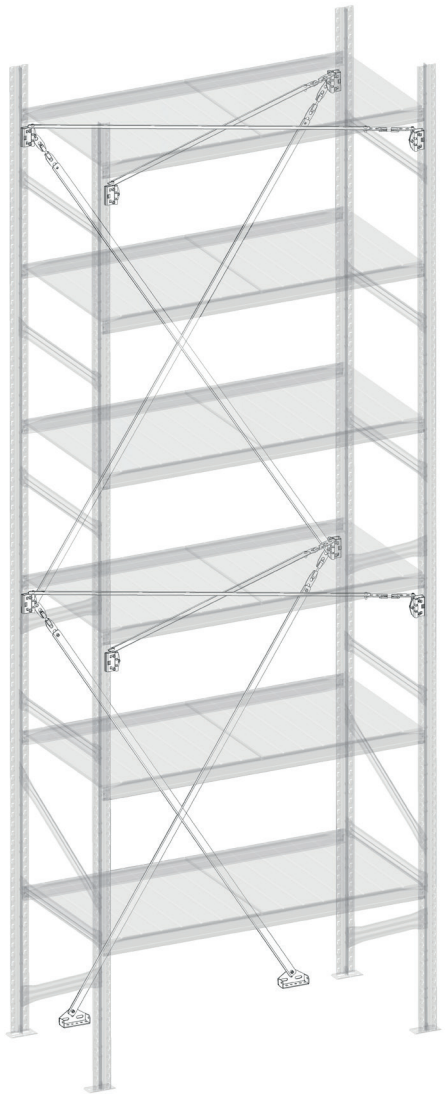


Fig. 1

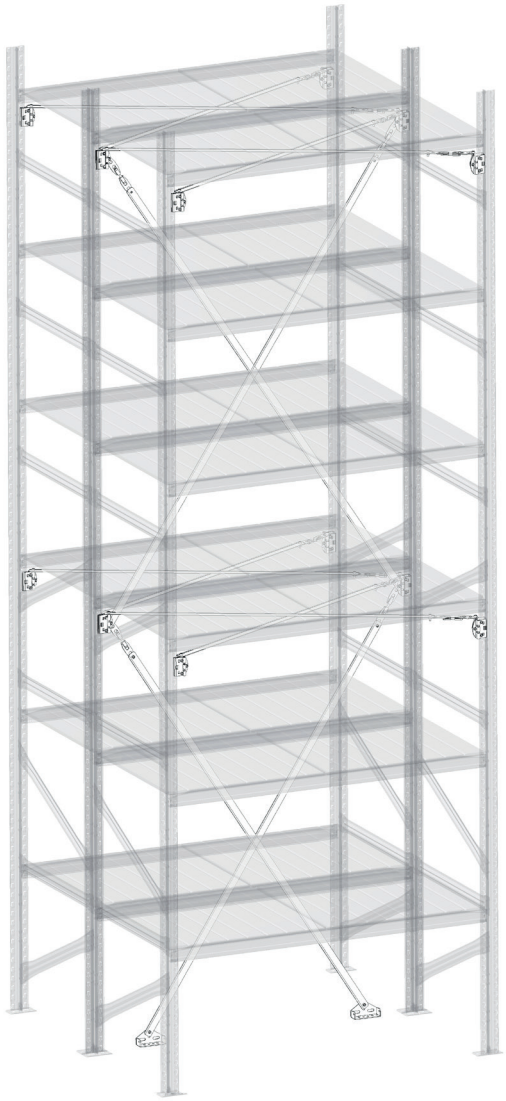


Fig. 2

Bracing components

The bracing is composed of tensioned stirrups connected to the uprights. Each tensioned stirrup is realized with a metal stirrup bolted to a turnbuckle. In turn, the stirrups are connected to the uprights by means of clamped brackets. The first bracing cross is anchored either to the floor with expansion anchor bolts or to the upright.

The accessories required to create a level of spine bracing and horizontal bracing, respectively for single side shelves and double side shelves, are assembled in macrocodes (Tab. 1). The macrocodes do not contain stirrups and anchor bolts, which must therefore be ordered separately.

Floor anchoring requires the additional accessories listed in Tab. 2.

The bracing stirrups must be ordered by length in accordance with the module geometry. The order length of the stirrup depends on the centre distance between the holes of the bracing brackets.

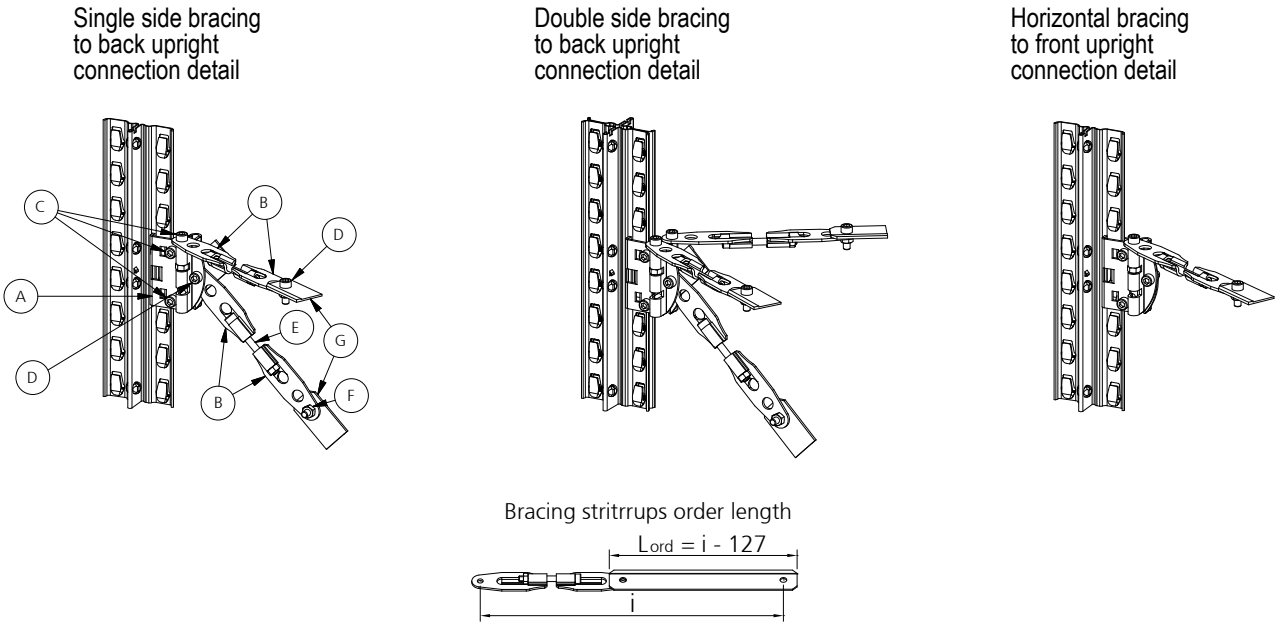


Fig. 3

Accessories for Super 1-2-3 bracing

Pos.	Code	Description	Quantity	
			Single side 67023.98	Double side 67024.98
A	68051/1.95	Half bracket for Super 1-2-3 bracing	12	16
B	68053.95	Half turnbuckle for lightweight bracing	8	12
C	00027.20	Hex socket bolt M6 x 30 UNI 5931 8.8 ZP	16	24
D	00035.20	Hex socket bolt M6 x 16 UNI 5931 8.8 ZP	8	10
E	00036.20	Hex socket bolt M6 x 70 UNI 5931 8.8 ZP	4	6
F	00020.20	Normal nut M6 UNI 5588 ZP	28	40
G	68049.95	Lightweight bracing stirrup	-	-

Note: the bracing stirrups and anchor bolts are not included in the bracing accessories order macrocodes.

Tab. 1

Accessories for floor anchoring

Code	Description	Q.ty
SLACC089.95	Bracket for Unirack bracing	2
00040.95	Expansion anchor bolt	4

Tab. 2

Horizontal bracing stirrups

The length of the horizontal bracing stirrups depends on the nominal dimensions of the shelf.

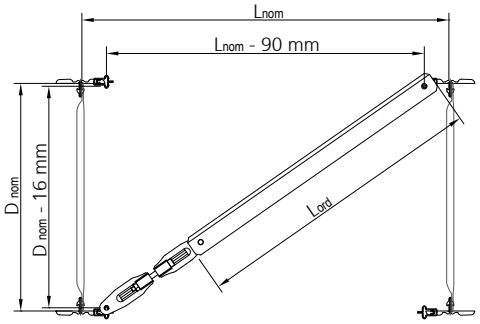


Fig. 4

Order length for horizontal bracing stirrups

Depth [mm]	Length [mm]								
	450	600	900	1050	1200	1350	1500	1650	1800
250	302	434	716	861	1007	1155	1302	1450	1599
320	344	467	738	880	1024	1169	1315	1462	1610
400	399	511	769	907	1048	1190	1334	1480	1626
450	437	543	792	927	1065	1206	1348	1492	1637
500	476	576	817	948	1084	1223	1364	1506	1650
600	559	648	872	997	1127	1262	1399	1539	1680
700	646	726	933	1052	1177	1307	1440	1576	1715
800	736	808	1000	1112	1232	1357	1486	1619	1754

Order length calculation formula (Fig. 4): $L_{ord} = \sqrt{(L_{nom} - 90mm)^2 + (P_{nom} - 16)^2} - 127mm$

Tab. 3

Spine bracing stirrups

The vertical bracing brackets must be positioned directly under the beams, which form part of the bracing system.

The position and number of horizontal bracing crosses depend on the height of the shelving and the layout of the loading levels.

Super 1-2-3 shelving is considered to be braced if the following prescriptions are satisfied:

- The bracing must start from the ground and reach at least 2/3 of the height of the shelving;
- The inclination of the stirrups of the individual crosses must be no greater than 60° with respect to the horizontal;
- Metal base plates fixed to the floor with anchor bolts must be used (plastic base plates are not allowed).

Examples of correct bracing configuration are given in Fig. 5.

The order length of the first spine bracing level stirrups depends on the starting position of the bracing and the type of base plate used:

- start from floor (Fig. 8 - Tab. 4);
- start from upright (Fig. 6, Fig. 7 - Tab. 5);

The order length of stirrups of the levels after the first level depends only on the difference in height between the various connected levels and the nominal bay length (Fig. 9, Tab. 6).

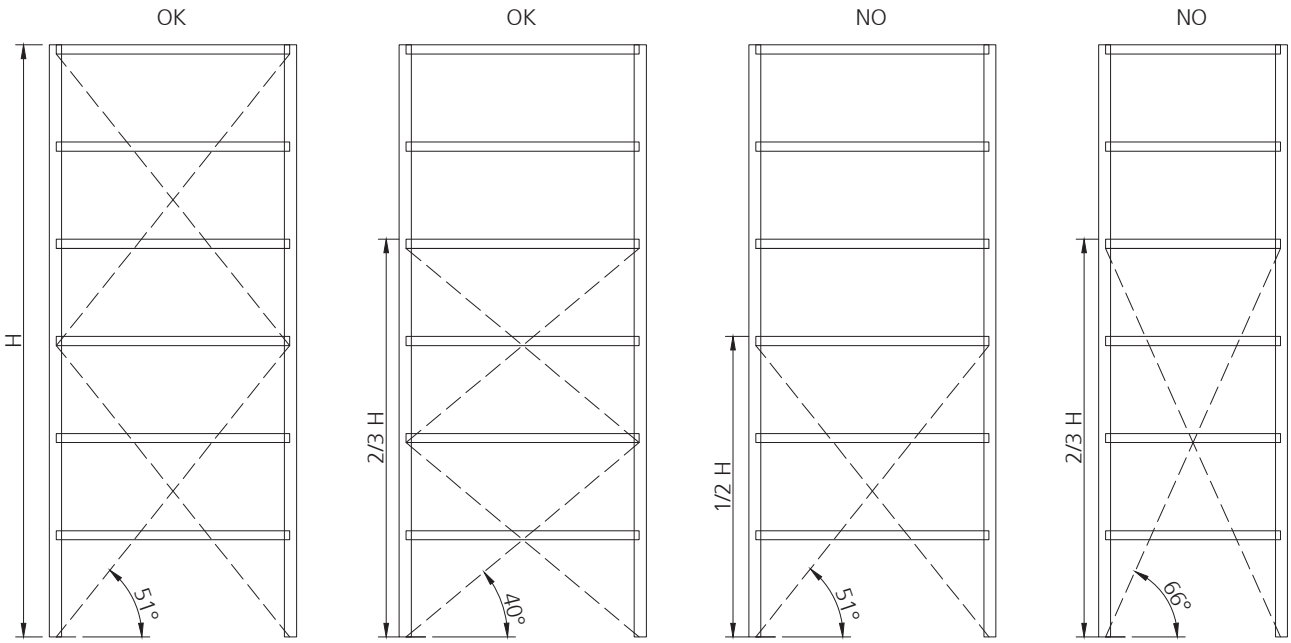


Fig. 5

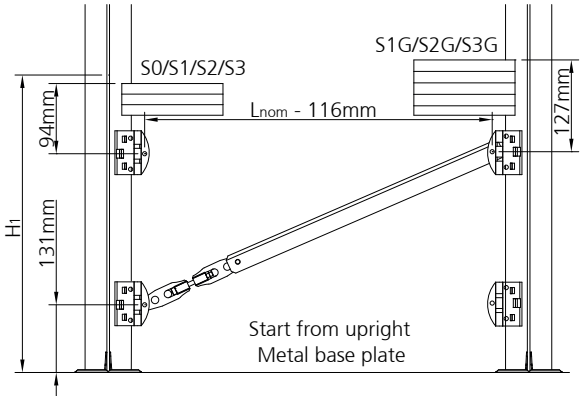


Fig. 6

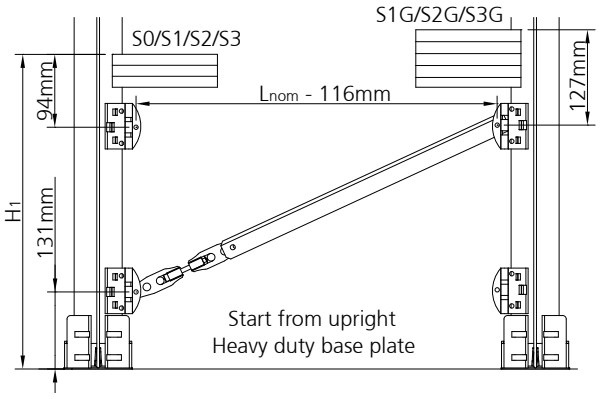


Fig. 7

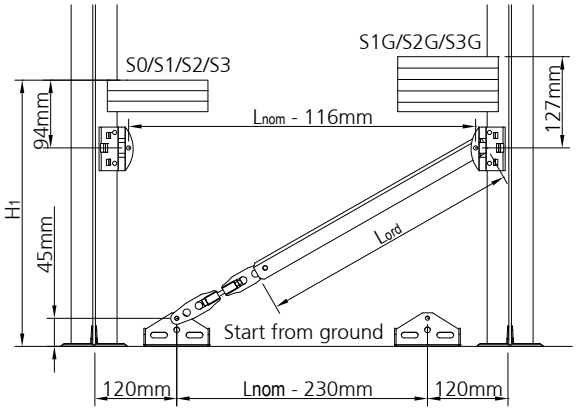


Fig. 8

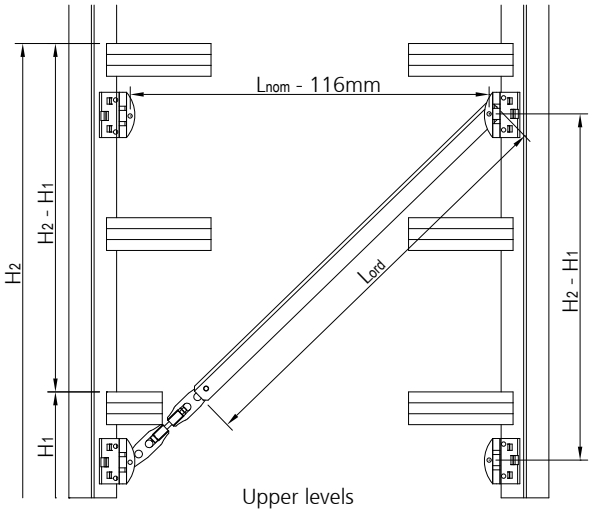


Fig. 9

Order length of stirrups for spine bracing - first level with start from floor

H1 [mm]		Bay nominal Length [mm]								
S0123	SG	450	600	900	1050	1200	1350	1500	1650	1800
323	356	206	338	623	769	916	1064	1213	1361	1510
356	389	225	352	632	776	923	1070	1218	1366	1514
389	422	246	368	642	785	930	1076	1223	1371	1519
422	455	269	385	653	795	938	1084	1230	1377	1524
455	488	293	404	666	805	948	1092	1237	1383	1530
488	521	-	424	679	817	958	1101	1245	1391	1537
521	554	-	446	694	830	969	1110	1254	1399	1544
554	587	-	468	710	843	981	1121	1263	1407	1552
587	620	-	492	727	858	993	1132	1274	1416	1561
620	653	-	516	745	873	1007	1144	1284	1426	1570
653	686	-	541	763	890	1021	1157	1296	1437	1579
686	719	-	567	783	907	1037	1171	1308	1448	1589
719	752	-	593	803	924	1052	1185	1321	1460	1600
752	785	-	-	824	943	1069	1200	1335	1472	1612
785	818	-	-	846	962	1086	1216	1349	1485	1624
818	851	-	-	868	982	1104	1232	1364	1499	1636
851	884	-	-	891	1003	1123	1249	1379	1513	1649
884	917	-	-	914	1024	1142	1266	1395	1527	1662
917	950	-	-	938	1045	1161	1284	1411	1542	1676
950	983	-	-	962	1068	1182	1302	1428	1558	1691
983	1016	-	-	987	1090	1202	1321	1446	1574	1706
1016	1049	-	-	1012	1113	1224	1341	1464	1591	1721
1049	1082	-	-	1038	1137	1245	1361	1482	1608	1737
1082	1115	-	-	1064	1161	1267	1381	1501	1625	1754
1115	1148	-	-	1090	1185	1290	1402	1520	1643	1770
1148	1181	-	-	1117	1210	1313	1423	1540	1662	1787
1181	1214	-	-	1144	1235	1336	1445	1560	1681	1805
1214	1247	-	-	1171	1260	1360	1467	1581	1700	1823
1247	1280	-	-	1198	1286	1384	1489	1602	1719	1841
1280	1313	-	-	-	1312	1408	1512	1623	1739	1860
1313	1346	-	-	-	1338	1433	1535	1645	1760	1879
1346	1379	-	-	-	1365	1458	1559	1667	1780	1899
1379	1412	-	-	-	1392	1483	1583	1689	1802	1919
1412	1445	-	-	-	1419	1509	1607	1712	1823	1939
1445	1478	-	-	-	1446	1534	1631	1735	1845	1959
1478	1511	-	-	-	1474	1560	1656	1758	1867	1980
1511	1544	-	-	-	1501	1587	1681	1782	1889	2001
1544	1577	-	-	-	-	1613	1706	1806	1912	2023
1577	1610	-	-	-	-	1640	1731	1830	1934	2044
1610	1643	-	-	-	-	1667	1757	1854	1958	2066
1643	1676	-	-	-	-	1694	1783	1879	1981	2089
1676	1709	-	-	-	-	1722	1809	1904	2005	2111
1709	1742	-	-	-	-	1749	1835	1929	2029	2134
1742	1775	-	-	-	-	1777	1862	1954	2053	2157
1775	1808	-	-	-	-	1805	1888	1980	2077	2180
1808	1841	-	-	-	-	-	1915	2005	2102	2204
1841	1874	-	-	-	-	-	1942	2031	2127	2228
1874	1907	-	-	-	-	-	1970	2057	2152	2252
1907	1940	-	-	-	-	-	1997	2084	2177	2276
1940	1973	-	-	-	-	-	2024	2110	2202	2300
1973	2006	-	-	-	-	-	2052	2137	2228	2325

Order length calculation formula - S0/S1/S2/S3 beams (Fig. 8): $L_{ord} = \sqrt{(H_1 - 139mm)^2 + (L_{nom} - 173)^2} - 127mm$

Order length calculation formula - SG beams (Fig. 8): $L_{ord} = \sqrt{(H_1 - 172mm)^2 + (L_{nom} - 173)^2} - 127mm$

Tab. 4

Order length of stirrups for spine bracing - first level with start from upright

H1 [mm]		Bay nominal Length [mm]								
S0123	SG	450	600	900	1050	1200	1350	1500	1650	1800
323	356	221	367	663	812	961	1111	1260	1410	1560
356	389	232	374	668	816	965	1114	1263	1413	1562
389	422	245	384	674	821	969	1118	1267	1416	1565
422	455	261	396	681	828	975	1123	1271	1420	1568
455	488	279	409	690	835	981	1128	1276	1424	1573
488	521	298	424	700	843	988	1135	1282	1429	1577
521	554	319	440	711	853	997	1142	1288	1435	1583
554	587	342	458	723	863	1006	1150	1296	1442	1589
587	620	-	477	737	875	1016	1159	1304	1449	1595
620	653	-	498	751	887	1027	1169	1312	1457	1603
653	686	-	519	766	900	1038	1179	1322	1466	1611
686	719	-	541	782	915	1051	1190	1332	1475	1619
719	752	-	565	800	930	1064	1202	1343	1485	1628
752	785	-	589	818	945	1078	1215	1354	1495	1638
785	818	-	613	836	962	1093	1228	1366	1506	1648
818	851	-	638	856	979	1109	1242	1379	1518	1658
851	884	-	-	876	997	1125	1257	1392	1530	1670
884	917	-	-	897	1016	1142	1272	1406	1543	1681
917	950	-	-	919	1035	1159	1288	1420	1556	1694
950	983	-	-	941	1055	1177	1304	1435	1570	1706
983	1016	-	-	964	1076	1196	1321	1451	1584	1720
1016	1049	-	-	987	1097	1215	1339	1467	1599	1734
1049	1082	-	-	1010	1119	1235	1357	1484	1614	1748
1082	1115	-	-	1035	1141	1255	1375	1501	1630	1763
1115	1148	-	-	1059	1163	1276	1394	1518	1646	1778
1148	1181	-	-	1084	1186	1297	1414	1537	1663	1793
1181	1214	-	-	1109	1210	1318	1434	1555	1681	1809
1214	1247	-	-	1135	1233	1340	1454	1574	1698	1826
1247	1280	-	-	1161	1257	1363	1475	1593	1716	1843
1280	1313	-	-	1187	1282	1386	1497	1613	1735	1860
1313	1346	-	-	1214	1307	1409	1518	1633	1754	1878
1346	1379	-	-	1241	1332	1432	1540	1654	1773	1896
1379	1412	-	-	-	1358	1456	1563	1675	1793	1914
1412	1445	-	-	-	1383	1480	1585	1696	1813	1933
1445	1478	-	-	-	1409	1505	1608	1718	1833	1952
1478	1511	-	-	-	1436	1530	1632	1740	1854	1972
1511	1544	-	-	-	1462	1555	1655	1762	1875	1992
1544	1577	-	-	-	1489	1580	1679	1785	1896	2012
1577	1610	-	-	-	1516	1606	1703	1808	1918	2033
1610	1643	-	-	-	1544	1632	1728	1831	1940	2053
1643	1676	-	-	-	-	1658	1753	1854	1962	2074
1676	1709	-	-	-	-	1684	1778	1878	1985	2096
1709	1742	-	-	-	-	1711	1803	1902	2007	2118
1742	1775	-	-	-	-	1737	1829	1926	2030	2140
1775	1808	-	-	-	-	1764	1854	1951	2054	2162
1808	1841	-	-	-	-	1792	1880	1976	2077	2184
1841	1874	-	-	-	-	1819	1906	2001	2101	2207
1874	1907	-	-	-	-	1846	1933	2026	2125	2230
1907	1940	-	-	-	-	-	1959	2051	2149	2253
1940	1973	-	-	-	-	-	1986	2077	2174	2277
1973	2006	-	-	-	-	-	2013	2103	2199	2300

Order length calculation formula - S0/S1/S2/S3 beams (Fig. 6, Fig. 7): $L_{ord} = \sqrt{(H_1 - 225mm)^2 + (L_{nom} - 116)^2} - 127mm$

Order length calculation formula - SG beams (Fig. 6, Fig. 7): $L_{ord} = \sqrt{(H_1 - 258mm)^2 + (L_{nom} - 116)^2} - 127mm$

Tab. 5

Order length of stirrups for spine bracing - levels after first level

H2-H1 [mm]	Bay nominal Length [mm]								
	450	600	900	1050	1200	1350	1500	1650	1800
330	343	459	724	864	1006	1150	1296	1442	1589
363	366	478	737	875	1016	1159	1304	1449	1596
396	391	498	751	887	1027	1169	1313	1457	1603
429	417	520	767	901	1039	1179	1322	1466	1611
462	443	542	783	915	1051	1191	1332	1475	1619
495	470	565	800	930	1065	1203	1343	1485	1628
528	498	589	818	946	1079	1215	1354	1495	1638
561	526	614	837	963	1094	1229	1366	1506	1648
594	-	639	857	980	1109	1243	1379	1518	1659
627	-	665	877	998	1125	1257	1392	1530	1670
660	-	691	898	1017	1142	1272	1406	1543	1682
693	-	718	919	1036	1160	1288	1421	1556	1694
726	-	746	942	1056	1178	1305	1436	1570	1707
759	-	773	964	1077	1196	1322	1451	1585	1720
792	-	801	987	1098	1216	1339	1468	1599	1734
825	-	829	1011	1119	1235	1357	1484	1615	1748
858	-	-	1035	1141	1255	1376	1501	1631	1763
891	-	-	1060	1164	1276	1395	1519	1647	1778
924	-	-	1085	1187	1297	1415	1537	1664	1794
957	-	-	1110	1210	1319	1435	1556	1681	1810
990	-	-	1136	1234	1341	1455	1575	1699	1826
1023	-	-	1162	1258	1363	1476	1594	1717	1843
1056	-	-	1188	1283	1386	1497	1614	1735	1861
1089	-	-	1215	1308	1410	1519	1634	1754	1878
1122	-	-	1242	1333	1433	1541	1655	1774	1897
1155	-	-	1269	1358	1457	1563	1676	1793	1915
1188	-	-	1296	1384	1481	1586	1697	1813	1934
1221	-	-	1324	1410	1506	1609	1719	1834	1953
1254	-	-	1352	1437	1531	1632	1741	1854	1973
1287	-	-	1380	1463	1556	1656	1763	1875	1992
1320	-	-	1408	1490	1581	1680	1786	1897	2013
1353	-	-	1437	1517	1607	1704	1808	1918	2033
1386	-	-	-	1544	1633	1729	1832	1940	2054
1419	-	-	-	1572	1659	1754	1855	1963	2075
1452	-	-	-	1599	1685	1779	1879	1985	2097
1485	-	-	-	1627	1712	1804	1903	2008	2118
1518	-	-	-	1655	1738	1829	1927	2031	2140
1551	-	-	-	1684	1765	1855	1952	2054	2162
1584	-	-	-	1712	1792	1881	1976	2078	2185
1617	-	-	-	1740	1820	1907	2001	2102	2208
1650	-	-	-	-	1847	1933	2027	2126	2231
1683	-	-	-	-	1875	1960	2052	2150	2254
1716	-	-	-	-	1903	1987	2078	2175	2277
1749	-	-	-	-	1931	2014	2103	2199	2301
1782	-	-	-	-	1959	2041	2129	2224	2325
1815	-	-	-	-	1987	2068	2155	2249	2349
1848	-	-	-	-	2015	2095	2182	2275	2373
1881	-	-	-	-	-	2123	2208	2300	2398
1914	-	-	-	-	-	2150	2235	2326	2422
1947	-	-	-	-	-	2178	2262	2352	2447
1980	-	-	-	-	-	2206	2289	2378	2472

Order length calculation formula (Fig. 9): $L_{ord} = \sqrt{(H_2 - H_1)^2 + (L_{nom} - 116mm)^2} - 127mm$

Tab. 6

REINFORCEMENT BAR

The reinforcement bar (Fig. 1), composed of a tubular profile with high stiffness end connectors, enhances the stability of unbraced shelving rows.

The use of reinforcement bars has two effects:

- Permits the creation of shelving rows with less than 4 bays without requiring bracing or wall anchoring;
- Increases the load bearing capacity of unbraced shelving rows.

The reinforcement bar can be ordered in two versions for the various nominal bay lengths using the codes shown in Tab. 1. The special length code must be ordered using the nominal bay length.

The reinforcement bar can be covered by an accessory profile (Fig. 2, Tab. 3), which clips over the bar profile to create a seat for accessories such as H12-H25 planks or modular containers.

The two versions of stabilization bar differ in performance when used as beams adopting the accessory profile. BS2 stabilization bar performs as an S2 beam, while BS3 stabilization bar performs as an S3 beam (Data sheet 15/10/05 and Data sheet 15/10/10). The load bearing capacity of a hybrid shelf formed by an accessorised stabilization bar at the rear and a standard beam at the front, cannot be rated at a load bearing capacity greater than the capacity of the front beam or however, never greater than the capacity of the beam equivalent to the adopted stabilization bar.

The reinforcement bar can also be ordered as loose material. Refer to Tab. 2 for the appropriate lengths. In these cases the bars must be assembled in situ by following the installation instructions **ISTM-298**.

The application of the load bearing capacity tables of unbraced rows with reinforcement bars (Data sheet 15/05/10) requires the installation a reinforcement bar level at 2/3 of the height from the top level exclusively on the rear uprights of single side rows (Fig. 3). All bays must be stabilized with a reinforcement bar. The bars must be installed on both the central uprights of double side rows.

When using the accessory profile, the stabilization bar must be installed at the loading level closest to 2/3 of the height from the top level.

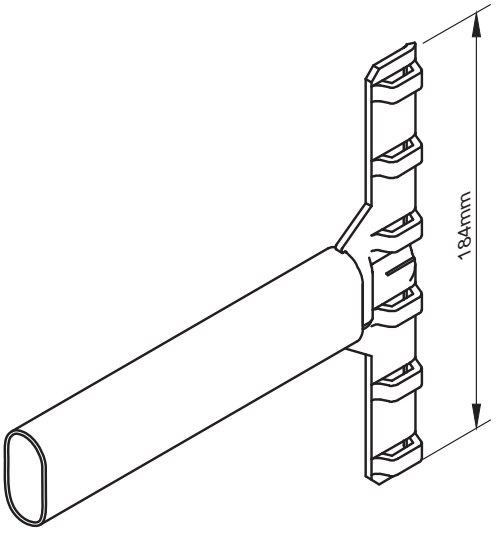


Fig. 1

Order codes for Super 1-2-3 / Unirack reinforcement bar

Description	Code		Order length [mm]
	BS2	BS3	
Reinforcement bar S123/US L900	AL210082.95	AL210101.95	-
Reinforcement bar S123/US L1050	AL210083.95	AL210102.95	-
Reinforcement bar S123/US L1200	AL210084.95	AL210103.95	-
Reinforcement bar S123/US L1350	AL210085.95	AL210104.95	-
Reinforcement bar S123/US L1500	AL210086.95	AL210105.95	-
Reinforcement bar S123/US L1650	AL210087.95	AL210106.95	-
Reinforcement bar S123/US L1800	AL210088.95	AL210107.95	-
Reinforcement bar S123/US special length	AL210080.95	AL210123.95	L_{nom}

Note: two safety clips, code 67016.95 or code 67017.98, are required for each reinforcement bar

Tab. 1

Order codes for reinforcement bar loose components

Macrocode	Code	Description	Qty.	Length [mm]
AL210127.95	AL210100.95	Connector for reinforcement bar S123/US	2	-
	00032.20	M8X70 CHS bolt 8.8 DIN912 ZP	2	-
-	36001.95	Galvanized oval profile 40x20x2	1	L_{nom} - 87
	36002.95	Galvanized oval profile 40x20x3		

Tab. 2

Order codes for Super 1-2-3 / Unirack reinforcement bar accessory profile

Code	Description
AL210201.95	S123/US Reinforcement bar accessory profile L900
AL210202.95	S123/US Reinforcement bar accessory profile L1050
AL210203.95	S123/US Reinforcement bar accessory profile L1200
AL210204.95	S123/US Reinforcement bar accessory profile L1350
AL210205.95	S123/US Reinforcement bar accessory profile L1500
AL210206.95	S123/US Reinforcement bar accessory profile L1650
AL210207.95	S123/US Reinforcement bar accessory profile L1800

Tab. 3

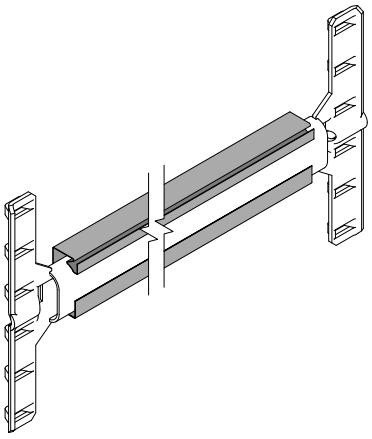


Fig. 2

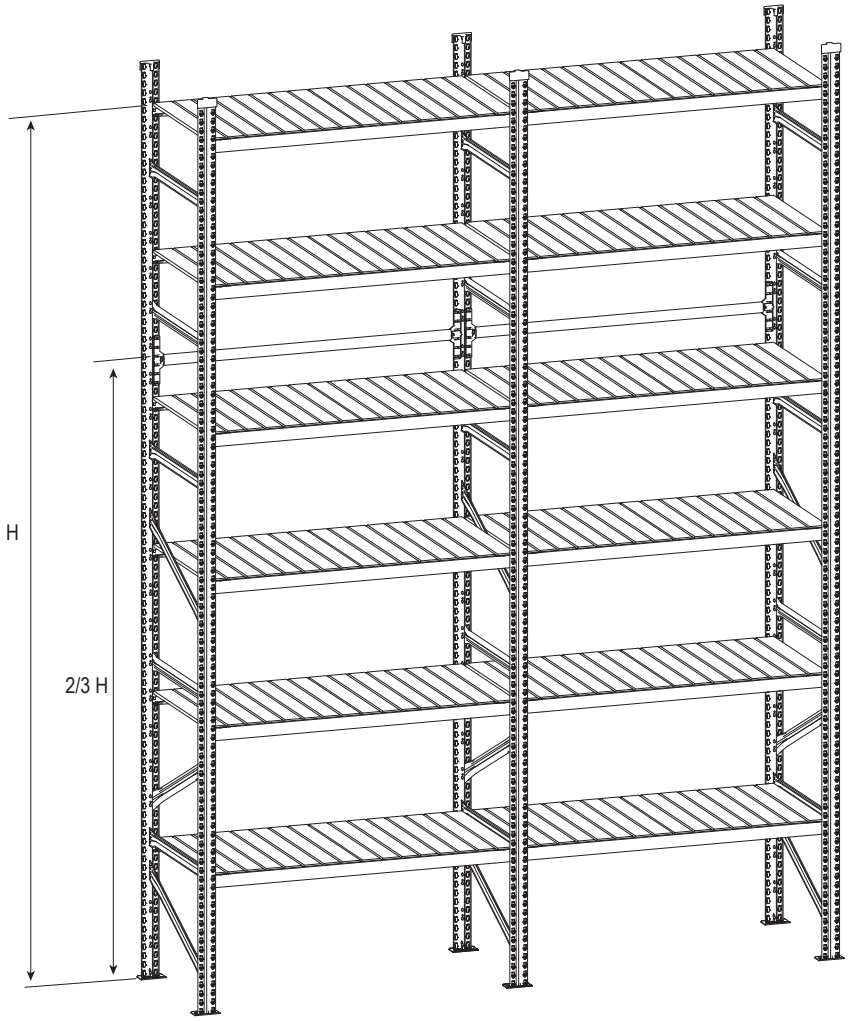


Fig. 3

FRAME LOAD BEARING CAPACITY OF UNBRACED ROWS

The maximum load bearing capacity per level depends on the following parameters (Fig. 1):

1. Frame height;
2. Number of levels;
3. Length of beams;
4. Selected uprights and beams.

The procedure to determine the load bearing capacity is detailed in Data sheet 05/10/10.

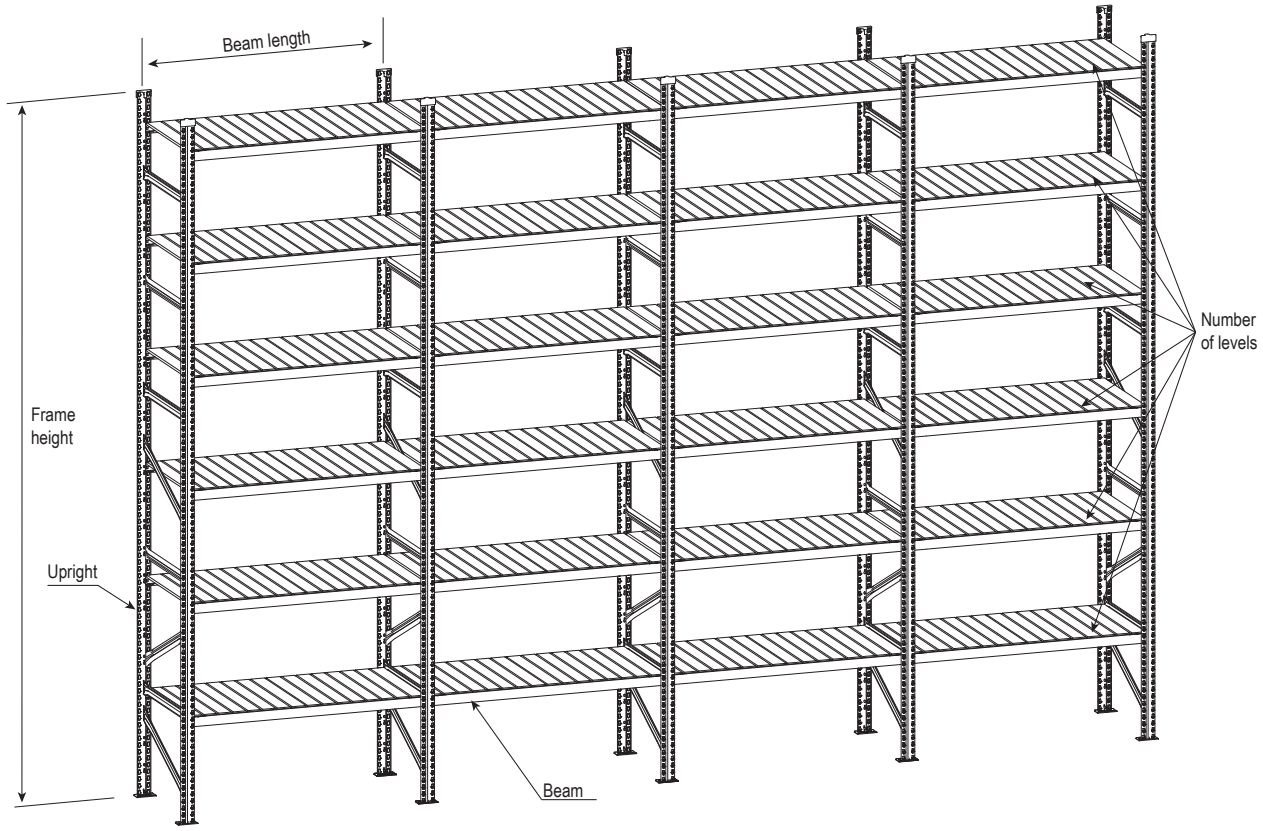


Fig. 1

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		900															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	180	200	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S1	180	260	260	260	120	190	240	260	-	-	-	-	-	-	-	-
	S2	180	260	370	390	120	190	280	310	-	-	-	-	-	-	-	-
	S3	180	260	370	450	120	190	280	350	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	200	200	200	200	150	160	160	170	-	-	-	-	-	-	-	-
	S1	200	260	260	260	150	210	220	240	-	150	170	180	-	120	130	150
	S2	200	300	340	370	150	220	270	290	-	150	210	230	-	150	170	180
	S3	200	300	390	420	150	220	310	330	-	150	220	260	-	170	190	210
	S1G	200	300	350	350	150	220	290	340	-	150	220	260	-	170	180	210
	S2G	200	300	410	520	150	220	310	480	-	150	220	360	-	170	250	310
	S3G	200	300	410	620	150	220	310	480	-	150	220	360	-	170	250	390
5	S0	170	190	200	200	140	140	150	160	-	-	-	-	-	-	-	-
	S1	170	230	260	260	140	190	200	220	-	150	160	170	-	120	130	140
	S2	170	230	290	360	140	210	250	280	-	170	200	220	-	150	160	180
	S3	170	230	290	410	140	210	290	320	-	170	230	250	-	160	190	200
	S1G	170	230	290	350	140	210	280	320	-	170	220	250	-	160	180	200
	S2G	170	230	290	430	140	210	290	440	-	170	250	370	-	160	230	300
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	130	130	140	140	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	180	190	210	-	140	150	160	-	110	120	130
	S2	-	-	-	-	130	210	240	270	-	180	190	210	-	140	150	170
	S3	-	-	-	-	130	210	280	310	-	180	220	240	-	160	180	190
	S1G	-	-	-	-	130	210	270	310	-	180	210	240	-	160	170	200
	S2G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	290
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	370
7	S0	-	-	-	-	120	130	130	140	-	-	-	-	-	-	-	-
	S1	-	-	-	-	120	180	190	200	-	140	140	160	-	110	110	130
	S2	-	-	-	-	120	210	240	260	-	170	180	200	-	140	150	160
	S3	-	-	-	-	120	210	280	300	-	180	220	230	-	160	170	190
	S1G	-	-	-	-	130	210	270	310	-	180	210	240	-	160	170	190
	S2G	-	-	-	-	130	210	280	400	-	180	240	340	-	160	220	290
	S3G	-	-	-	-	130	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	140	150	-	110	110	120
	S2	-	-	-	-	-	-	-	-	-	160	180	200	-	140	140	160
	S3	-	-	-	-	-	-	-	-	-	160	210	230	-	160	170	190
	S1G	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	190
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	150	-	100	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	130	140	160
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	150	170	180
	S1G	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	280
	S3G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	130	140	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	160	180
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	280
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 1

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1050															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	170	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S1	180	230	230	230	120	190	230	230	-	-	-	-	-	-	-	-
	S2	180	260	330	330	120	190	280	310	-	-	-	-	-	-	-	-
	S3	180	260	370	380	120	190	280	350	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	170	170	170	170	150	160	160	170	-	-	-	-	-	-	-	-
	S1	200	230	230	230	150	210	220	230	-	150	160	180	-	120	130	140
	S2	200	300	330	330	150	220	260	290	-	150	200	220	-	150	160	180
	S3	200	300	380	380	150	220	310	330	-	150	220	250	-	170	190	210
	S1G	200	300	350	350	150	220	290	330	-	150	220	260	-	170	180	210
	S2G	200	300	410	520	150	220	310	480	-	150	220	360	-	170	250	300
	S3G	200	300	410	620	150	220	310	480	-	150	220	360	-	170	250	380
5	S0	170	170	170	170	140	140	150	150	-	-	-	-	-	-	-	-
	S1	170	230	230	230	140	190	200	220	-	150	160	170	-	120	120	140
	S2	170	230	290	330	140	210	250	280	-	170	200	220	-	150	160	170
	S3	170	230	290	380	140	210	290	310	-	170	230	250	-	160	180	200
	S1G	170	230	290	350	140	210	280	320	-	170	220	250	-	160	180	200
	S2G	170	230	290	430	140	210	290	440	-	170	250	370	-	160	230	300
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	130	130	140	140	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	180	190	210	-	140	150	160	-	110	120	130
	S2	-	-	-	-	130	210	240	260	-	180	190	210	-	140	150	170
	S3	-	-	-	-	130	210	280	300	-	180	220	240	-	160	180	190
	S1G	-	-	-	-	130	210	270	310	-	180	210	240	-	160	170	190
	S2G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	290
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	370
7	S0	-	-	-	-	120	130	130	140	-	-	-	-	-	-	-	-
	S1	-	-	-	-	120	180	190	200	-	130	140	160	-	110	110	130
	S2	-	-	-	-	120	210	240	260	-	170	180	200	-	140	150	160
	S3	-	-	-	-	120	210	280	300	-	180	210	230	-	160	170	190
	S1G	-	-	-	-	120	210	260	300	-	180	200	230	-	150	160	190
	S2G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	290
	S3G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	140	150	-	100	110	120
	S2	-	-	-	-	-	-	-	-	-	160	180	200	-	130	140	160
	S3	-	-	-	-	-	-	-	-	-	160	210	230	-	150	170	180
	S1G	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	190
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	280
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	150	-	100	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	130	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	150	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	150	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	280
	S3G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	130	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	270
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 2

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1200															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	150	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-
	S1	180	200	200	200	120	190	200	200	-	-	-	-	-	-	-	-
	S2	180	260	270	270	120	190	270	270	-	-	-	-	-	-	-	-
	S3	180	260	320	320	120	190	280	320	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	150	150	150	150	150	150	150	150	-	-	-	-	-	-	-	-
	S1	200	200	200	200	150	200	200	200	-	150	160	180	-	120	130	140
	S2	200	270	270	270	150	220	260	270	-	150	200	220	-	150	160	180
	S3	200	300	320	320	150	220	300	320	-	150	220	250	-	170	190	200
	S1G	200	300	350	350	150	220	290	330	-	150	220	260	-	170	180	210
	S2G	200	300	410	520	150	220	310	480	-	150	220	360	-	170	250	300
	S3G	200	300	410	620	150	220	310	480	-	150	220	360	-	170	250	380
5	S0	150	150	150	150	140	140	150	150	-	-	-	-	-	-	-	-
	S1	170	200	200	200	140	190	200	200	-	150	150	170	-	120	120	140
	S2	170	230	270	270	140	210	250	270	-	170	190	210	-	150	160	170
	S3	170	230	290	320	140	210	290	310	-	170	230	240	-	160	180	200
	S1G	170	230	290	350	140	210	280	320	-	170	220	250	-	160	170	200
	S2G	170	230	290	430	140	210	290	440	-	170	250	370	-	160	230	300
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	130	130	140	140	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	180	190	200	-	140	150	160	-	110	120	130
	S2	-	-	-	-	130	210	240	260	-	170	190	200	-	140	150	170
	S3	-	-	-	-	130	210	280	300	-	180	220	230	-	160	170	190
	S1G	-	-	-	-	130	210	270	310	-	180	210	240	-	160	170	190
	S2G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	290
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	370
7	S0	-	-	-	-	120	130	130	130	-	-	-	-	-	-	-	-
	S1	-	-	-	-	120	180	180	200	-	130	140	150	-	110	110	120
	S2	-	-	-	-	120	210	230	260	-	170	180	200	-	140	140	160
	S3	-	-	-	-	120	210	280	300	-	180	210	230	-	160	170	190
	S1G	-	-	-	-	120	210	260	300	-	180	200	230	-	150	160	190
	S2G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	280
	S3G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	140	150	-	100	110	120
	S2	-	-	-	-	-	-	-	-	-	160	180	190	-	130	140	160
	S3	-	-	-	-	-	-	-	-	-	160	210	220	-	150	170	180
	S1G	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	280
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	140	-	100	100	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	130	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	150	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	130	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	270
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 3

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1350															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	120	160	160	160	-	-	-	-	-	-	-	-
	S2	180	210	210	210	120	190	210	210	-	-	-	-	-	-	-	-
	S3	180	250	250	250	120	190	250	250	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	150	160	160	160	-	150	160	160	-	120	130	140
	S2	200	210	210	210	150	210	210	210	-	150	200	210	-	150	160	180
	S3	200	250	250	250	150	220	250	250	-	150	220	250	-	170	190	200
	S1G	200	300	350	350	150	220	290	330	-	150	220	250	-	170	180	210
	S2G	200	300	410	520	150	220	310	480	-	150	220	360	-	170	250	300
	S3G	200	300	410	620	150	220	310	480	-	150	220	360	-	170	250	380
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	140	160	160	160	-	150	150	160	-	120	120	140
	S2	170	210	210	210	140	210	210	210	-	170	190	210	-	150	150	170
	S3	170	230	250	250	140	210	250	250	-	170	220	240	-	160	180	200
	S1G	170	230	290	350	140	210	270	310	-	170	210	250	-	160	170	200
	S2G	170	230	290	430	140	210	290	440	-	170	250	360	-	160	230	290
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	160	160	160	-	140	140	160	-	110	120	130
	S2	-	-	-	-	130	210	210	210	-	170	180	200	-	140	150	160
	S3	-	-	-	-	130	210	250	250	-	180	210	230	-	160	170	190
	S1G	-	-	-	-	130	210	260	300	-	180	210	240	-	160	170	190
	S2G	-	-	-	-	130	210	280	430	-	180	250	350	-	160	230	290
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	370
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	120	160	160	160	-	130	140	150	-	110	110	120
	S2	-	-	-	-	120	210	210	210	-	170	180	200	-	130	140	160
	S3	-	-	-	-	120	210	250	250	-	180	210	230	-	150	170	180
	S1G	-	-	-	-	120	210	260	300	-	180	200	230	-	150	160	190
	S2G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	280
	S3G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	150	-	100	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	130	140	160
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	150	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	280
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	120	130	140	-	100	100	120
	S2	-	-	-	-	-	-	-	-	-	160	170	190	-	130	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	220	-	150	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	120	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	270
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 4

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1500															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	120	130	130	130	-	-	-	-	-	-	-	-
	S2	170	170	170	170	120	170	170	170	-	-	-	-	-	-	-	-
	S3	180	200	200	200	120	190	200	200	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	340	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	130	130	130	130	-	130	130	130	-	120	130	130
	S2	170	170	170	170	150	170	170	170	-	150	170	170	-	150	160	170
	S3	200	200	200	200	150	200	200	200	-	150	200	200	-	170	180	200
	S1G	200	300	350	350	150	220	290	330	-	150	220	250	-	170	180	200
	S2G	200	300	410	520	150	220	310	470	-	150	220	360	-	170	250	300
	S3G	200	300	410	620	150	220	310	480	-	150	220	360	-	170	250	370
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	130	130	130	130	-	130	130	130	-	120	120	130
	S2	170	170	170	170	140	170	170	170	-	170	170	170	-	140	150	170
	S3	170	200	200	200	140	200	200	200	-	170	200	200	-	160	180	190
	S1G	170	230	290	350	140	210	270	310	-	170	210	250	-	160	170	200
	S2G	170	230	290	430	140	210	290	440	-	170	250	360	-	160	230	290
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	130	130	130	-	130	130	130	-	110	120	130
	S2	-	-	-	-	130	170	170	170	-	170	170	170	-	140	150	160
	S3	-	-	-	-	130	200	200	200	-	180	200	200	-	160	170	190
	S1G	-	-	-	-	130	210	260	300	-	180	200	240	-	160	160	190
	S2G	-	-	-	-	130	210	280	430	-	180	250	350	-	160	230	280
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	120	130	130	130	-	130	130	130	-	110	110	120
	S2	-	-	-	-	120	170	170	170	-	170	170	170	-	130	140	160
	S3	-	-	-	-	120	200	200	200	-	180	200	200	-	150	170	180
	S1G	-	-	-	-	120	210	260	300	-	180	200	230	-	150	160	190
	S2G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	280
	S3G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	130	-	100	110	120
	S2	-	-	-	-	-	-	-	-	-	160	170	170	-	130	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	200	-	150	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	190	230	-	150	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	280
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	120	130	130	-	100	100	110
	S2	-	-	-	-	-	-	-	-	-	160	170	170	-	130	130	150
	S3	-	-	-	-	-	-	-	-	-	160	200	200	-	150	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	120	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	270
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 5

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1650															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	-	-	-	-	-	-	-
	S2	140	140	140	140	120	140	140	140	-	-	-	-	-	-	-	-
	S3	170	170	170	170	120	170	170	170	-	-	-	-	-	-	-	-
	S1G	180	260	330	330	120	190	280	330	-	-	-	-	-	-	-	-
	S2G	180	260	370	470	120	190	280	450	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	110	110	110	-	110	110	110
	S2	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140
	S3	170	170	170	170	150	170	170	170	-	150	170	170	-	160	170	170
	S1G	200	300	330	330	150	220	290	320	-	150	220	250	-	170	180	200
	S2G	200	300	410	470	150	220	310	470	-	150	220	360	-	170	240	290
	S3G	200	300	410	580	150	220	310	480	-	150	220	360	-	170	250	370
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	110	110	110	-	110	110	110
	S2	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140
	S3	170	170	170	170	140	170	170	170	-	170	170	170	-	160	170	170
	S1G	170	230	290	330	140	210	270	310	-	170	210	240	-	160	170	200
	S2G	170	230	290	430	140	210	290	440	-	170	250	360	-	160	230	290
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	110	110	110	110	-	110	110	110	-	110	110	110
	S2	-	-	-	-	130	140	140	140	-	140	140	140	-	140	140	140
	S3	-	-	-	-	130	170	170	170	-	170	170	170	-	150	170	170
	S1G	-	-	-	-	130	210	260	300	-	180	200	230	-	150	160	190
	S2G	-	-	-	-	130	210	280	430	-	180	250	350	-	160	230	280
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	110	110	110	110	-	110	110	110	-	100	110	110
	S2	-	-	-	-	120	140	140	140	-	140	140	140	-	130	140	140
	S3	-	-	-	-	120	170	170	170	-	170	170	170	-	150	170	170
	S1G	-	-	-	-	120	210	260	300	-	180	200	230	-	150	160	180
	S2G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	280
	S3G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	110	110	110	-	100	110	110
	S2	-	-	-	-	-	-	-	-	-	140	140	140	-	130	140	140
	S3	-	-	-	-	-	-	-	-	-	160	170	170	-	150	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	150	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	270
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	110	110	110	-	100	100	110
	S2	-	-	-	-	-	-	-	-	-	140	140	140	-	120	130	140
	S3	-	-	-	-	-	-	-	-	-	160	170	170	-	140	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	140	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	90	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	120	130	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	260
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 6

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

Load bearing capacity per level of unbraced rows - at least 4 consecutive bays

Beam length [mm]		1800															
Frame height [mm]		1576				1840/1972				2500				3028			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	120	140	140	140	-	-	-	-	-	-	-	-
	S1G	180	260	310	310	120	190	280	310	-	-	-	-	-	-	-	-
	S2G	180	260	370	430	120	190	280	430	-	-	-	-	-	-	-	-
	S3G	180	260	370	530	120	190	280	450	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140
	S1G	200	300	310	310	150	220	280	310	-	150	220	250	-	170	180	200
	S2G	200	300	410	430	150	220	310	430	-	150	220	360	-	170	240	290
	S3G	200	300	410	530	150	220	310	480	-	150	220	360	-	170	250	370
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140
	S1G	170	230	290	310	140	210	270	310	-	170	210	240	-	160	170	200
	S2G	170	230	290	430	140	210	290	430	-	170	250	360	-	160	230	290
	S3G	170	230	290	430	140	210	290	440	-	170	250	390	-	160	230	370
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	130	140	140	140	-	140	140	140	-	140	140	140
	S1G	-	-	-	-	130	210	260	300	-	180	200	230	-	150	160	190
	S2G	-	-	-	-	130	210	280	430	-	180	250	350	-	160	230	280
	S3G	-	-	-	-	130	210	280	430	-	180	250	360	-	160	230	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	120	140	140	140	-	140	140	140	-	140	140	140
	S1G	-	-	-	-	120	210	260	300	-	180	200	230	-	150	160	180
	S2G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	280
	S3G	-	-	-	-	120	210	280	400	-	180	240	340	-	160	220	350
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	140	140	140	-	140	140	140
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	150	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	270
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	140	140	140	-	140	140	140
	S1G	-	-	-	-	-	-	-	-	-	160	190	220	-	140	150	170
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	140	140
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	260
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300

Tab. 7

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2000mm for S0 beams - 3000mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams.

FRAME LOAD BEARING CAPACITY OF ROWS WITH REINFORCEMENT BARS

The maximum load bearing capacity per level depends on the following parameters (Fig. 1):

1. Frame height;
2. Number of levels;
3. Length of beams;
4. Selected uprights and beams.

The procedure to determine the load bearing capacity is detailed in Data sheet 05/10/10.

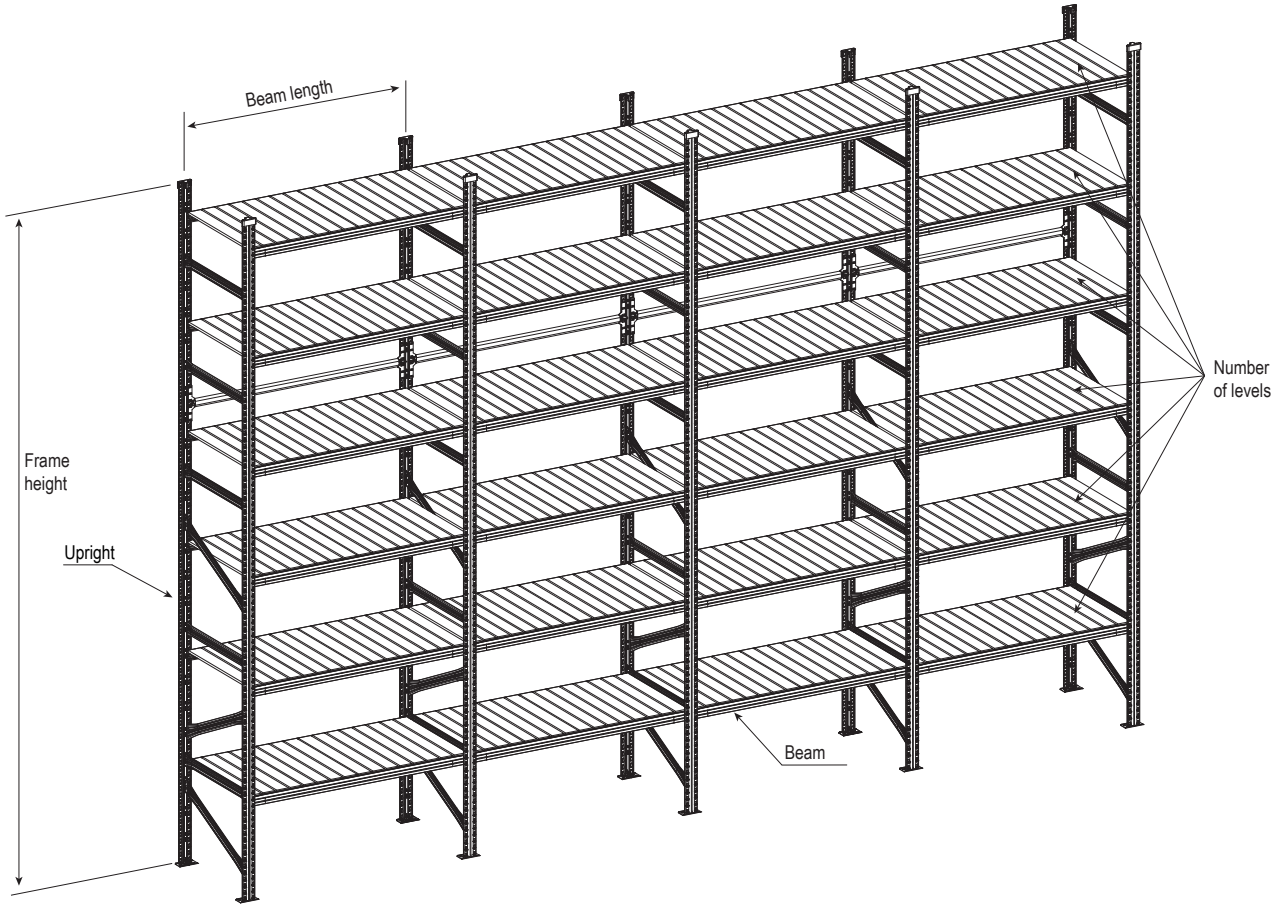


Fig. 1

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		900																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	180	200	200	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	180	260	260	260	120	190	260	260	-	-	-	-	-	-	-	-	-	-	-	-
	S2	180	260	370	390	120	190	280	390	-	-	-	-	-	-	-	-	-	-	-	-
	S3	180	260	370	450	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	200	200	200	200	150	200	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S1	210	260	260	260	150	220	260	260	-	150	220	260	-	170	200	230	-	-	-	-
	S2	210	300	390	390	150	220	310	390	-	150	220	330	-	170	230	260	-	-	-	-
	S3	210	300	410	450	150	220	310	450	-	150	220	350	-	170	250	280	-	-	-	-
	S1G	210	300	350	350	150	220	310	350	-	150	220	350	-	170	240	280	-	-	-	-
	S2G	210	300	410	520	150	220	310	480	-	150	220	360	-	170	250	360	-	-	-	-
	S3G	210	300	410	620	150	220	310	480	-	150	220	360	-	170	250	420	-	-	-	-
5	S0	170	200	200	200	170	200	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S1	170	230	260	260	170	210	260	260	-	170	230	260	-	160	180	210	-	-	150	180
	S2	170	230	290	390	170	210	290	380	-	170	250	300	-	160	210	240	-	-	150	200
	S3	170	230	290	430	170	210	290	420	-	170	250	320	-	160	230	260	-	-	150	220
	S1G	170	230	290	350	170	210	290	350	-	170	250	320	-	160	220	260	-	-	150	220
	S2G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	340	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	160	200	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	160	210	260	260	-	180	210	230	-	150	160	190	-	-	140	160
	S2	-	-	-	-	160	210	280	350	-	180	240	270	-	160	190	220	-	-	160	190
	S3	-	-	-	-	160	210	280	380	-	180	250	300	-	160	210	240	-	-	180	200
	S1G	-	-	-	-	160	210	280	350	-	180	250	300	-	160	200	240	-	-	180	210
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	320	-	-	200	280
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	150	190	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	150	210	250	260	-	180	190	220	-	140	150	170	-	-	130	150
	S2	-	-	-	-	150	210	280	340	-	180	230	260	-	160	180	200	-	-	160	180
	S3	-	-	-	-	150	210	280	370	-	180	240	280	-	160	200	220	-	-	170	190
	S1G	-	-	-	-	150	210	280	350	-	180	240	290	-	160	190	230	-	-	170	200
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	310	-	-	210	270
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	180	200	-	130	140	160	-	-	120	140
	S2	-	-	-	-	-	-	-	-	-	160	220	240	-	160	170	190	-	-	150	160
	S3	-	-	-	-	-	-	-	-	-	160	220	270	-	160	190	210	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	220	270	-	160	190	220	-	-	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	300	-	-	190	260
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	170	190	-	120	130	150	-	-	120	130
	S2	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	180	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	200	260	-	150	180	200	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	200	260	-	150	180	210	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	290	-	-	200	250
	S3G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	120	130	150	-	-	110	130
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160	180	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	180	200	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	290	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 1

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		1050																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	170	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	180	230	230	230	120	190	230	230	-	-	-	-	-	-	-	-	-	-	-	-
	S2	180	260	330	330	120	190	280	330	-	-	-	-	-	-	-	-	-	-	-	-
	S3	180	260	370	380	120	190	280	380	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	170	170	170	170	150	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S1	210	230	230	230	150	220	230	230	-	150	220	230	-	170	200	230	-	-	-	-
	S2	210	300	330	330	150	220	310	330	-	150	220	320	-	170	230	260	-	-	-	-
	S3	210	300	380	380	150	220	310	380	-	150	220	350	-	170	250	280	-	-	-	-
	S1G	210	300	350	350	150	220	310	350	-	150	220	350	-	170	240	280	-	-	-	-
	S2G	210	300	410	520	150	220	310	480	-	150	220	360	-	170	250	360	-	-	-	-
	S3G	210	300	410	620	150	220	310	480	-	150	220	360	-	170	250	420	-	-	-	-
5	S0	170	170	170	170	170	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S1	170	230	230	230	170	210	230	230	-	170	230	230	-	160	180	200	-	-	150	180
	S2	170	230	290	330	170	210	290	330	-	170	250	290	-	160	210	230	-	-	150	200
	S3	170	230	290	380	170	210	290	380	-	170	250	320	-	160	230	250	-	-	150	220
	S1G	170	230	290	350	170	210	290	350	-	170	250	320	-	160	220	260	-	-	150	220
	S2G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	340	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	160	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	160	210	230	230	-	180	200	230	-	150	160	180	-	-	140	160
	S2	-	-	-	-	160	210	280	330	-	180	240	270	-	160	190	210	-	-	160	180
	S3	-	-	-	-	160	210	280	380	-	180	250	290	-	160	210	230	-	-	180	200
	S1G	-	-	-	-	160	210	280	350	-	180	250	300	-	160	200	240	-	-	170	200
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	320	-	-	200	280
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	150	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	150	210	230	230	-	180	190	210	-	140	150	170	-	-	130	150
	S2	-	-	-	-	150	210	280	330	-	180	220	250	-	160	180	200	-	-	150	170
	S3	-	-	-	-	150	210	280	370	-	180	240	280	-	160	200	220	-	-	170	190
	S1G	-	-	-	-	150	210	280	350	-	180	240	280	-	160	190	220	-	-	170	190
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	310	-	-	210	270
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	180	200	-	130	140	160	-	-	120	140
	S2	-	-	-	-	-	-	-	-	-	160	210	240	-	160	170	190	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	220	270	-	160	190	210	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	220	270	-	160	180	210	-	-	160	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	300	-	-	190	250
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	170	190	-	120	130	150	-	-	110	130
	S2	-	-	-	-	-	-	-	-	-	160	200	230	-	150	160	180	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	200	250	-	150	180	200	-	-	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	200	260	-	150	170	200	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	290	-	-	200	250
	S3G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	120	130	140	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	180	190	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	280	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 2

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		1200																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	150	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	180	200	200	200	120	190	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S2	180	260	270	270	120	190	270	270	-	-	-	-	-	-	-	-	-	-	-	-
	S3	180	260	320	320	120	190	280	320	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	150	150	150	150	150	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-
	S1	200	200	200	200	150	200	200	200	-	150	200	200	-	170	200	200	-	-	-	-
	S2	210	270	270	270	150	220	270	270	-	150	220	270	-	170	220	250	-	-	-	-
	S3	210	300	320	320	150	220	310	320	-	150	220	320	-	170	240	270	-	-	-	-
	S1G	210	300	350	350	150	220	310	350	-	150	220	340	-	170	240	280	-	-	-	-
	S2G	210	300	410	520	150	220	310	480	-	150	220	360	-	170	250	350	-	-	-	-
	S3G	210	300	410	620	150	220	310	480	-	150	220	360	-	170	250	420	-	-	-	-
5	S0	150	150	150	150	150	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-
	S1	170	200	200	200	170	200	200	200	-	170	200	200	-	160	180	200	-	-	150	170
	S2	170	230	270	270	170	210	270	270	-	170	250	270	-	160	200	230	-	-	150	200
	S3	170	230	290	320	170	210	290	320	-	170	250	310	-	160	230	250	-	-	150	220
	S1G	170	230	290	350	170	210	290	350	-	170	250	320	-	160	220	250	-	-	150	220
	S2G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	330	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	150	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	160	200	200	200	-	180	200	200	-	150	160	180	-	-	140	160
	S2	-	-	-	-	160	210	270	270	-	180	230	260	-	160	190	210	-	-	160	180
	S3	-	-	-	-	160	210	280	320	-	180	250	290	-	160	210	230	-	-	180	200
	S1G	-	-	-	-	160	210	280	350	-	180	250	290	-	160	200	230	-	-	170	200
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	320	-	-	200	270
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	150	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	150	200	200	200	-	180	190	200	-	140	150	170	-	-	130	150
	S2	-	-	-	-	150	210	270	270	-	180	220	250	-	160	180	200	-	-	150	170
	S3	-	-	-	-	150	210	280	320	-	180	240	280	-	160	200	220	-	-	170	190
	S1G	-	-	-	-	150	210	280	350	-	180	240	280	-	160	190	220	-	-	160	190
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	300	-	-	210	260
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	180	200	-	130	140	160	-	-	120	130
	S2	-	-	-	-	-	-	-	-	-	160	210	240	-	150	170	190	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	220	260	-	160	190	210	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	220	270	-	160	180	210	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	300	-	-	190	250
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	150	170	190	-	120	130	150	-	-	110	130
	S2	-	-	-	-	-	-	-	-	-	160	200	220	-	150	160	180	-	-	140	150
	S3	-	-	-	-	-	-	-	-	-	160	200	250	-	150	180	200	-	-	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	200	250	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	290	-	-	200	250
	S3G	-	-	-	-	-	-	-	-	-	160	200	280	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	120	130	140	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	190	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	200	-	-	140	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	280	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 3

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
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- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		1350																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	120	160	160	160	-	-	-	-	-	-	-	-	-	-	-	-
	S2	180	210	210	210	120	190	210	210	-	-	-	-	-	-	-	-	-	-	-	-
	S3	180	250	250	250	120	190	250	250	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	150	160	160	160	-	150	160	160	-	160	160	160	-	-	-	-
	S2	210	210	210	210	150	210	210	210	-	150	210	210	-	170	210	210	-	-	-	-
	S3	210	250	250	250	150	220	250	250	-	150	220	250	-	170	240	250	-	-	-	-
	S1G	210	300	350	350	150	220	310	350	-	150	220	340	-	170	240	270	-	-	-	-
	S2G	210	300	410	520	150	220	310	480	-	150	220	360	-	170	250	350	-	-	-	-
	S3G	210	300	410	620	150	220	310	480	-	150	220	360	-	170	250	410	-	-	-	-
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	160	160	160	160	-	160	160	160	-	160	160	160	-	-	150	160
	S2	170	210	210	210	170	210	210	210	-	170	210	210	-	160	200	210	-	-	150	200
	S3	170	230	250	250	170	210	250	250	-	170	250	250	-	160	220	250	-	-	150	220
	S1G	170	230	290	350	170	210	290	350	-	170	250	310	-	160	220	250	-	-	150	220
	S2G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	330	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	160	160	160	160	-	160	160	160	-	150	160	160	-	-	140	150
	S2	-	-	-	-	160	210	210	210	-	180	210	210	-	160	180	210	-	-	160	180
	S3	-	-	-	-	160	210	250	250	-	180	250	250	-	160	210	230	-	-	180	200
	S1G	-	-	-	-	160	210	280	350	-	180	250	290	-	160	200	230	-	-	170	200
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	310	-	-	200	270
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	150	160	160	160	-	160	160	160	-	140	150	160	-	-	130	140
	S2	-	-	-	-	150	210	210	210	-	180	210	210	-	160	170	200	-	-	150	170
	S3	-	-	-	-	150	210	250	250	-	180	240	250	-	160	200	220	-	-	170	190
	S1G	-	-	-	-	150	210	280	350	-	180	240	280	-	160	190	220	-	-	160	190
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	300	-	-	210	260
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	160	160	-	130	140	160	-	-	120	130
	S2	-	-	-	-	-	-	-	-	-	160	210	210	-	150	170	190	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	220	250	-	160	190	210	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	220	260	-	160	180	210	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	300	-	-	190	250
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	150	160	160	-	120	130	150	-	-	110	130
	S2	-	-	-	-	-	-	-	-	-	160	200	210	-	140	160	180	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	160	200	250	-	150	180	200	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	160	200	250	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	280	-	-	200	250
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	120	120	140	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	190	-	-	150	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	190	-	-	140	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	280	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 4

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		1500																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	120	130	130	130	-	-	-	-	-	-	-	-	-	-	-	-
	S2	170	170	170	170	120	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S3	180	200	200	200	120	190	200	200	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	130	130	130	130	-	130	130	130	-	130	130	130	-	-	-	-
	S2	170	170	170	170	150	170	170	170	-	150	170	170	-	170	170	170	-	-	-	-
	S3	200	200	200	200	150	200	200	200	-	150	200	200	-	170	200	200	-	-	-	-
	S1G	210	300	350	350	150	220	310	350	-	150	220	340	-	170	230	270	-	-	-	-
	S2G	210	300	410	520	150	220	310	480	-	150	220	360	-	170	250	350	-	-	-	-
	S3G	210	300	410	620	150	220	310	480	-	150	220	360	-	170	250	410	-	-	-	-
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	130	130	130	130	-	130	130	130	-	130	130	130	-	-	130	130
	S2	170	170	170	170	170	170	170	170	-	170	170	170	-	160	170	170	-	-	150	170
	S3	170	200	200	200	170	200	200	200	-	170	200	200	-	160	200	200	-	-	150	200
	S1G	170	230	290	350	170	210	290	350	-	170	250	310	-	160	220	250	-	-	150	220
	S2G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	330	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	130	130	130	-	130	130	130	-	130	130	130	-	-	130	130
	S2	-	-	-	-	160	170	170	170	-	170	170	170	-	160	170	170	-	-	160	170
	S3	-	-	-	-	160	200	200	200	-	180	200	200	-	160	200	200	-	-	180	200
	S1G	-	-	-	-	160	210	280	350	-	180	250	290	-	160	200	230	-	-	170	200
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	310	-	-	200	270
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	130	130	130	-	130	130	130	-	130	130	130	-	-	130	130
	S2	-	-	-	-	150	170	170	170	-	170	170	170	-	160	170	170	-	-	150	170
	S3	-	-	-	-	150	200	200	200	-	180	200	200	-	160	190	200	-	-	170	190
	S1G	-	-	-	-	150	210	280	350	-	180	240	270	-	160	190	220	-	-	160	190
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	300	-	-	210	260
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	130	-	130	130	130	-	-	120	130
	S2	-	-	-	-	-	-	-	-	-	160	170	170	-	150	160	170	-	-	140	160
	S3	-	-	-	-	-	-	-	-	-	160	200	200	-	160	190	200	-	-	160	180
	S1G	-	-	-	-	-	-	-	-	-	160	220	260	-	160	180	210	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	290	-	-	190	250
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	130	-	120	130	130	-	-	110	130
	S2	-	-	-	-	-	-	-	-	-	160	170	170	-	140	160	170	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	160	200	200	-	150	180	200	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	160	200	250	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	280	-	-	200	240
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	110	120	130	-	-	110	120
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	140	150	170	-	-	130	150
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	190	-	-	150	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	160	190	-	-	140	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	280	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 5

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		1650																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	-	-	-	-	-	-	-	-	-	-	-
	S2	140	140	140	140	120	140	140	140	-	-	-	-	-	-	-	-	-	-	-	-
	S3	170	170	170	170	120	170	170	170	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	330	330	120	190	280	330	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	470	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	110	110	110	-	110	110	110	-	-	-	-
	S2	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140	-	-	-	-
	S3	170	170	170	170	150	170	170	170	-	150	170	170	-	170	170	170	-	-	-	-
	S1G	210	300	330	330	150	220	310	330	-	150	220	330	-	170	230	270	-	-	-	-
	S2G	210	300	410	470	150	220	310	470	-	150	220	360	-	170	250	340	-	-	-	-
	S3G	210	300	410	580	150	220	310	480	-	150	220	360	-	170	250	410	-	-	-	-
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	110	110	110	-	110	110	110	-	-	110	110
	S2	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140	-	-	140	140
	S3	170	170	170	170	170	170	170	170	-	170	170	170	-	160	170	170	-	-	150	170
	S1G	170	230	290	330	170	210	290	330	-	170	250	310	-	160	210	250	-	-	150	210
	S2G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	330	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	110	110	110	110	-	110	110	110	-	110	110	110	-	-	110	110
	S2	-	-	-	-	140	140	140	140	-	140	140	140	-	140	140	140	-	-	140	140
	S3	-	-	-	-	160	170	170	170	-	170	170	170	-	160	170	170	-	-	170	170
	S1G	-	-	-	-	160	210	280	330	-	180	250	290	-	160	200	230	-	-	170	200
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	310	-	-	200	270
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	110	110	110	110	-	110	110	110	-	110	110	110	-	-	110	110
	S2	-	-	-	-	140	140	140	140	-	140	140	140	-	140	140	140	-	-	140	140
	S3	-	-	-	-	150	170	170	170	-	170	170	170	-	160	170	170	-	-	170	170
	S1G	-	-	-	-	150	210	280	330	-	180	230	270	-	160	190	220	-	-	160	190
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	300	-	-	210	260
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	110	110	110	-	110	110	110	-	-	110	110
	S2	-	-	-	-	-	-	-	-	-	140	140	140	-	140	140	140	-	-	140	140
	S3	-	-	-	-	-	-	-	-	-	160	170	170	-	160	170	170	-	-	160	170
	S1G	-	-	-	-	-	-	-	-	-	160	220	260	-	160	180	210	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	290	-	-	190	250
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	110	110	110	-	110	110	110	-	-	110	110
	S2	-	-	-	-	-	-	-	-	-	140	140	140	-	140	140	140	-	-	130	140
	S3	-	-	-	-	-	-	-	-	-	160	170	170	-	150	170	170	-	-	150	170
	S1G	-	-	-	-	-	-	-	-	-	160	200	250	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	280	-	-	200	240
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	110	110	110	-	-	110	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	140	140	140	-	-	130	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	170	-	-	150	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	160	190	-	-	140	170
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	270	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	110
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	140
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 6

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – at least 4 consecutive bays

Beam length [mm]		1800																			
Frame height mm]		1576				1840/1972				2500				3028				3424			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	120	140	140	140	-	-	-	-	-	-	-	-	-	-	-	-
	S1G	180	260	310	310	120	190	280	310	-	-	-	-	-	-	-	-	-	-	-	-
	S2G	180	260	370	430	120	190	280	430	-	-	-	-	-	-	-	-	-	-	-	-
	S3G	180	260	370	530	120	190	280	450	-	-	-	-	-	-	-	-	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140	-	-	-	-
	S1G	210	300	310	310	150	220	310	310	-	150	220	310	-	170	230	270	-	-	-	-
	S2G	210	300	410	430	150	220	310	430	-	150	220	360	-	170	250	340	-	-	-	-
	S3G	210	300	410	530	150	220	310	480	-	150	220	360	-	170	250	410	-	-	-	-
5	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	140	140	140	140	-	140	140	140	-	140	140	140	-	-	140	140
	S1G	170	230	290	310	170	210	290	310	-	170	250	310	-	160	210	250	-	-	150	210
	S2G	170	230	290	430	170	210	290	430	-	170	250	390	-	160	230	330	-	-	150	240
	S3G	170	230	290	430	170	210	290	440	-	170	250	390	-	160	230	370	-	-	150	240
6	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	140	140	140	140	-	140	140	140	-	140	140	140	-	-	140	140
	S1G	-	-	-	-	160	210	280	310	-	180	250	280	-	160	200	230	-	-	170	200
	S2G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	310	-	-	200	270
	S3G	-	-	-	-	160	210	280	430	-	180	250	360	-	160	230	370	-	-	200	330
7	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	140	140	140	140	-	140	140	140	-	140	140	140	-	-	140	140
	S1G	-	-	-	-	150	210	280	310	-	180	230	270	-	160	190	220	-	-	160	190
	S2G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	300	-	-	210	260
	S3G	-	-	-	-	150	210	280	400	-	180	240	340	-	160	220	350	-	-	210	310
8	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	140	140	140	-	140	140	140	-	-	140	140
	S1G	-	-	-	-	-	-	-	-	-	160	220	260	-	160	180	210	-	-	150	180
	S2G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	290	-	-	190	250
	S3G	-	-	-	-	-	-	-	-	-	160	220	290	-	160	220	340	-	-	190	270
9	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	140	140	140	-	140	140	140	-	-	140	140
	S1G	-	-	-	-	-	-	-	-	-	160	200	250	-	150	170	200	-	-	150	170
	S2G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	280	-	-	200	240
	S3G	-	-	-	-	-	-	-	-	-	160	200	270	-	150	210	310	-	-	200	270
10	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	140	140	140	-	-	140	140
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	160	190	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	270	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	150	200	300	-	-	180	230
11	S0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	140
	S1G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	160
	S2G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230
	S3G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	230

Tab. 7

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- Maximum shelving height: 2500mm for S0 beams - 3500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

FRAME LOAD BEARING CAPACITY OF ROWS WITH LESS THAN 4 BAYS AND REINFORCEMENT BARS

The maximum load bearing capacity per level depends on the following parameters (Fig. 1):

1. Frame height;
2. Number of levels;
3. Length of beams;
4. Selected uprights and beams.

The procedure to determine the load bearing capacity is detailed in Data sheet 05/10/10.

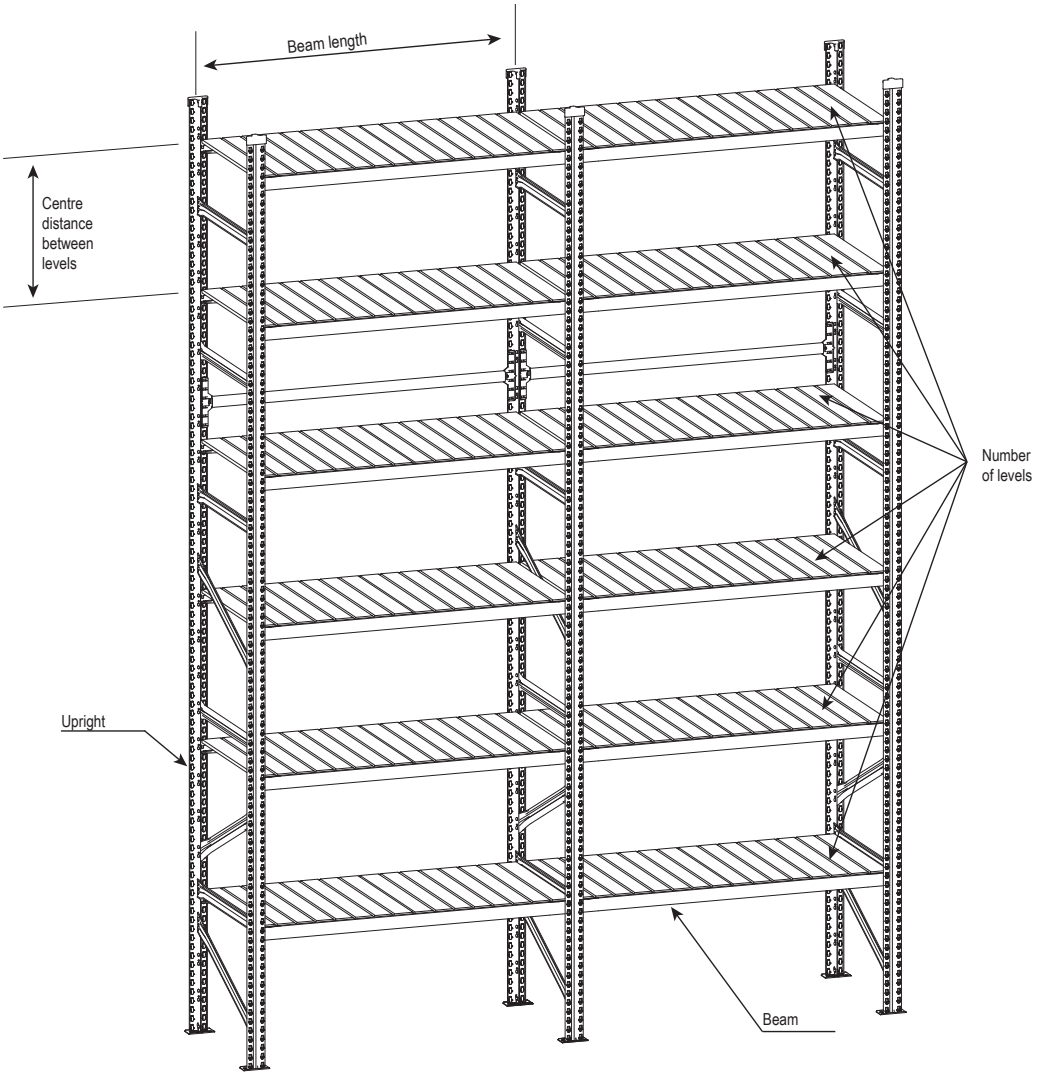


Fig. 1

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		900											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	180	200	200	200	-	-	-	-	-	-	-	-
	S1	180	260	260	260	120	190	260	260	-	-	-	-
	S2	180	260	370	390	120	190	280	390	-	-	-	-
	S3	180	260	370	450	120	190	280	450	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-
4	S0	200	200	200	200	150	200	200	200	-	-	-	-
	S1	210	260	260	260	150	220	260	260	-	150	220	260
	S2	210	300	390	390	150	220	310	390	-	150	220	330
	S3	210	300	410	450	150	220	310	450	-	150	220	350
	S1G	210	300	350	350	150	220	310	350	-	150	220	350
	S2G	210	300	410	520	150	220	310	480	-	150	220	360
	S3G	210	300	410	620	150	220	310	480	-	150	220	360
5	S0	170	200	200	200	170	200	200	200	-	-	-	-
	S1	170	230	260	260	170	210	260	260	-	170	230	260
	S2	170	230	290	390	170	210	290	380	-	170	250	300
	S3	170	230	290	430	170	210	290	420	-	170	250	320
	S1G	170	230	290	350	170	210	290	350	-	170	250	320
	S2G	170	230	290	430	170	210	290	440	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	150	200	200	200	-	-	-	-
	S1	-	-	-	-	150	210	260	260	-	180	210	230
	S2	-	-	-	-	150	210	280	350	-	180	240	270
	S3	-	-	-	-	150	210	280	380	-	180	250	300
	S1G	-	-	-	-	150	210	280	350	-	180	250	300
	S2G	-	-	-	-	160	210	280	430	-	180	250	360
	S3G	-	-	-	-	160	210	280	430	-	180	250	360
7	S0	-	-	-	-	150	190	200	200	-	-	-	-
	S1	-	-	-	-	150	210	250	260	-	180	190	220
	S2	-	-	-	-	150	210	280	340	-	180	230	260
	S3	-	-	-	-	150	210	280	370	-	180	240	280
	S1G	-	-	-	-	150	210	280	350	-	180	240	290
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	180	200
	S2	-	-	-	-	-	-	-	-	-	160	220	240
	S3	-	-	-	-	-	-	-	-	-	160	220	270
	S1G	-	-	-	-	-	-	-	-	-	160	220	270
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	170	190
	S2	-	-	-	-	-	-	-	-	-	160	200	230
	S3	-	-	-	-	-	-	-	-	-	160	200	260
	S1G	-	-	-	-	-	-	-	-	-	160	200	260
	S2G	-	-	-	-	-	-	-	-	-	160	200	280
	S3G	-	-	-	-	-	-	-	-	-	160	200	280

Tab. 1

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		1050											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	170	170	170	170	-	-	-	-	-	-	-	-
	S1	180	230	230	230	120	190	230	230	-	-	-	-
	S2	180	260	330	330	120	190	280	330	-	-	-	-
	S3	180	260	370	380	120	190	280	380	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-
4	S0	170	170	170	170	150	170	170	170	-	-	-	-
	S1	210	230	230	230	150	220	230	230	-	150	220	230
	S2	210	300	330	330	150	220	310	330	-	150	220	320
	S3	210	300	380	380	150	220	310	380	-	150	220	350
	S1G	210	300	350	350	150	220	310	350	-	150	220	350
	S2G	210	300	410	520	150	220	310	480	-	150	220	360
	S3G	210	300	410	620	150	220	310	480	-	150	220	360
5	S0	170	170	170	170	170	170	170	170	-	-	-	-
	S1	170	230	230	230	170	210	230	230	-	170	230	230
	S2	170	230	290	330	170	210	290	330	-	170	250	290
	S3	170	230	290	380	170	210	290	380	-	170	250	320
	S1G	170	230	290	350	170	210	290	350	-	170	250	320
	S2G	170	230	290	430	170	210	290	440	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	150	170	170	170	-	-	-	-
	S1	-	-	-	-	150	210	230	230	-	180	200	230
	S2	-	-	-	-	150	210	280	330	-	180	240	270
	S3	-	-	-	-	150	210	280	380	-	180	250	290
	S1G	-	-	-	-	150	210	280	350	-	180	250	300
	S2G	-	-	-	-	150	210	280	430	-	180	250	360
	S3G	-	-	-	-	150	210	280	430	-	180	250	360
7	S0	-	-	-	-	150	170	170	170	-	-	-	-
	S1	-	-	-	-	150	210	230	230	-	180	190	210
	S2	-	-	-	-	150	210	280	330	-	180	220	250
	S3	-	-	-	-	150	210	280	370	-	180	240	280
	S1G	-	-	-	-	150	210	280	350	-	180	240	280
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	180	200
	S2	-	-	-	-	-	-	-	-	-	160	210	240
	S3	-	-	-	-	-	-	-	-	-	160	220	270
	S1G	-	-	-	-	-	-	-	-	-	160	220	270
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	170	190
	S2	-	-	-	-	-	-	-	-	-	160	200	230
	S3	-	-	-	-	-	-	-	-	-	160	200	250
	S1G	-	-	-	-	-	-	-	-	-	160	200	260
	S2G	-	-	-	-	-	-	-	-	-	160	200	280
	S3G	-	-	-	-	-	-	-	-	-	160	200	280

Tab. 2

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		1200											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	150	150	150	150	-	-	-	-	-	-	-	-
	S1	180	200	200	200	120	190	200	200	-	-	-	-
	S2	180	260	270	270	120	190	270	270	-	-	-	-
	S3	180	260	320	320	120	190	280	320	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-
4	S0	150	150	150	150	150	150	150	150	-	-	-	-
	S1	200	200	200	200	150	200	200	200	-	150	200	200
	S2	210	270	270	270	150	220	270	270	-	150	220	270
	S3	210	300	320	320	150	220	310	320	-	150	220	320
	S1G	210	300	350	350	150	220	310	350	-	150	220	340
	S2G	210	300	410	520	150	220	310	480	-	150	220	360
	S3G	210	300	410	620	150	220	310	480	-	150	220	360
5	S0	150	150	150	150	150	150	150	150	-	-	-	-
	S1	170	200	200	200	170	200	200	200	-	170	200	200
	S2	170	230	270	270	170	210	270	270	-	170	250	270
	S3	170	230	290	320	170	210	290	320	-	170	250	310
	S1G	170	230	290	350	170	210	290	350	-	170	250	320
	S2G	170	230	290	430	170	210	290	440	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	150	150	150	150	-	-	-	-
	S1	-	-	-	-	150	200	200	200	-	180	200	200
	S2	-	-	-	-	150	210	270	270	-	180	230	260
	S3	-	-	-	-	150	210	280	320	-	180	250	290
	S1G	-	-	-	-	150	210	280	350	-	180	250	290
	S2G	-	-	-	-	150	210	280	430	-	180	250	360
	S3G	-	-	-	-	150	210	280	430	-	180	250	360
7	S0	-	-	-	-	150	150	150	150	-	-	-	-
	S1	-	-	-	-	150	200	200	200	-	180	190	200
	S2	-	-	-	-	150	210	270	270	-	180	220	250
	S3	-	-	-	-	150	210	280	320	-	180	240	280
	S1G	-	-	-	-	150	210	280	350	-	180	240	280
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	180	200
	S2	-	-	-	-	-	-	-	-	-	160	210	240
	S3	-	-	-	-	-	-	-	-	-	160	220	260
	S1G	-	-	-	-	-	-	-	-	-	160	220	270
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	150	170	190
	S2	-	-	-	-	-	-	-	-	-	160	200	220
	S3	-	-	-	-	-	-	-	-	-	160	200	250
	S1G	-	-	-	-	-	-	-	-	-	160	200	250
	S2G	-	-	-	-	-	-	-	-	-	160	200	280
	S3G	-	-	-	-	-	-	-	-	-	160	200	280

Tab. 3

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		1350											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	120	160	160	160	-	-	-	-
	S2	180	210	210	210	120	190	210	210	-	-	-	-
	S3	180	250	250	250	120	190	250	250	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	150	160	160	160	-	150	160	160
	S2	210	210	210	210	150	210	210	210	-	150	210	210
	S3	210	250	250	250	150	220	250	250	-	150	220	250
	S1G	210	300	350	350	150	220	310	350	-	150	220	340
	S2G	210	300	410	520	150	220	310	480	-	150	220	360
	S3G	210	300	410	620	150	220	310	480	-	150	220	360
5	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	160	160	160	160	160	160	160	160	-	160	160	160
	S2	170	210	210	210	170	210	210	210	-	170	210	210
	S3	170	230	250	250	170	210	250	250	-	170	250	250
	S1G	170	230	290	350	170	210	290	350	-	170	250	310
	S2G	170	230	290	430	170	210	290	440	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	150	160	160	160	-	160	160	160
	S2	-	-	-	-	150	210	210	210	-	180	210	210
	S3	-	-	-	-	150	210	250	250	-	180	250	250
	S1G	-	-	-	-	150	210	280	350	-	180	250	290
	S2G	-	-	-	-	150	210	280	430	-	180	250	360
	S3G	-	-	-	-	150	210	280	430	-	180	250	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	150	160	160	160	-	160	160	160
	S2	-	-	-	-	150	210	210	210	-	180	210	210
	S3	-	-	-	-	150	210	250	250	-	180	240	250
	S1G	-	-	-	-	150	210	280	350	-	180	240	280
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	160	160	160
	S2	-	-	-	-	-	-	-	-	-	160	210	210
	S3	-	-	-	-	-	-	-	-	-	160	220	250
	S1G	-	-	-	-	-	-	-	-	-	160	220	260
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	150	160	160
	S2	-	-	-	-	-	-	-	-	-	160	200	210
	S3	-	-	-	-	-	-	-	-	-	160	200	250
	S1G	-	-	-	-	-	-	-	-	-	160	200	250
	S2G	-	-	-	-	-	-	-	-	-	160	200	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270

Tab. 4

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		1500											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	120	130	130	130	-	-	-	-
	S2	170	170	170	170	120	170	170	170	-	-	-	-
	S3	180	200	200	200	120	190	200	200	-	-	-	-
	S1G	180	260	350	350	120	190	280	350	-	-	-	-
	S2G	180	260	370	520	120	190	280	450	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	130	130	130	130	-	130	130	130
	S2	170	170	170	170	150	170	170	170	-	150	170	170
	S3	200	200	200	200	150	200	200	200	-	150	200	200
	S1G	210	300	350	350	150	220	310	350	-	150	220	340
	S2G	210	300	410	520	150	220	310	480	-	150	220	360
	S3G	210	300	410	620	150	220	310	480	-	150	220	360
5	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	130	130	130	130	130	130	130	130	-	130	130	130
	S2	170	170	170	170	170	170	170	170	-	170	170	170
	S3	170	200	200	200	170	200	200	200	-	170	200	200
	S1G	170	230	290	350	170	210	290	350	-	170	250	310
	S2G	170	230	290	430	170	210	290	440	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	130	130	130	-	130	130	130
	S2	-	-	-	-	150	170	170	170	-	170	170	170
	S3	-	-	-	-	150	200	200	200	-	180	200	200
	S1G	-	-	-	-	150	210	280	350	-	180	250	290
	S2G	-	-	-	-	150	210	280	430	-	180	250	360
	S3G	-	-	-	-	150	210	280	430	-	180	250	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	130	130	130	130	-	130	130	130
	S2	-	-	-	-	150	170	170	170	-	170	170	170
	S3	-	-	-	-	150	200	200	200	-	180	200	200
	S1G	-	-	-	-	150	210	280	350	-	180	240	270
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	130
	S2	-	-	-	-	-	-	-	-	-	160	170	170
	S3	-	-	-	-	-	-	-	-	-	160	200	200
	S1G	-	-	-	-	-	-	-	-	-	160	220	260
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	130	130	130
	S2	-	-	-	-	-	-	-	-	-	160	170	170
	S3	-	-	-	-	-	-	-	-	-	160	200	200
	S1G	-	-	-	-	-	-	-	-	-	160	200	250
	S2G	-	-	-	-	-	-	-	-	-	160	200	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270

Tab. 5

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		1650											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	-	-	-
	S2	140	140	140	140	120	140	140	140	-	-	-	-
	S3	170	170	170	170	120	170	170	170	-	-	-	-
	S1G	180	260	330	330	120	190	280	330	-	-	-	-
	S2G	180	260	370	470	120	190	280	450	-	-	-	-
	S3G	180	260	370	580	120	190	280	450	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	110	110	110
	S2	140	140	140	140	140	140	140	140	-	140	140	140
	S3	170	170	170	170	150	170	170	170	-	150	170	170
	S1G	210	300	330	330	150	220	310	330	-	150	220	330
	S2G	210	300	410	470	150	220	310	470	-	150	220	360
	S3G	210	300	410	580	150	220	310	480	-	150	220	360
5	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	110	110	110	110	110	110	110	110	-	110	110	110
	S2	140	140	140	140	140	140	140	140	-	140	140	140
	S3	170	170	170	170	170	170	170	170	-	170	170	170
	S1G	170	230	290	330	170	210	290	330	-	170	250	310
	S2G	170	230	290	430	170	210	290	440	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	110	110	110	110	-	110	110	110
	S2	-	-	-	-	140	140	140	140	-	140	140	140
	S3	-	-	-	-	150	170	170	170	-	170	170	170
	S1G	-	-	-	-	150	210	280	330	-	180	250	290
	S2G	-	-	-	-	150	210	280	430	-	180	250	360
	S3G	-	-	-	-	150	210	280	430	-	180	250	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	110	110	110	110	-	110	110	110
	S2	-	-	-	-	140	140	140	140	-	140	140	140
	S3	-	-	-	-	150	170	170	170	-	170	170	170
	S1G	-	-	-	-	150	210	280	330	-	180	230	270
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	110	110	110
	S2	-	-	-	-	-	-	-	-	-	140	140	140
	S3	-	-	-	-	-	-	-	-	-	160	170	170
	S1G	-	-	-	-	-	-	-	-	-	160	220	260
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	110	110	110
	S2	-	-	-	-	-	-	-	-	-	140	140	140
	S3	-	-	-	-	-	-	-	-	-	160	170	170
	S1G	-	-	-	-	-	-	-	-	-	160	200	250
	S2G	-	-	-	-	-	-	-	-	-	160	200	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270

Tab. 6

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

Load bearing capacity per level of rows with reinforcement bars – less than 4 consecutive bays

Beam length [mm]		1800											
Frame height [mm]		1576				1840/1972				2500			
N° of levels	Upright / Beam	S0	S1	S2	S3	S0	S1	S2	S3	S0	S1	S2	S3
3	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	120	140	140	140	-	-	-	-
	S1G	180	260	310	310	120	190	280	310	-	-	-	-
	S2G	180	260	370	430	120	190	280	430	-	-	-	-
	S3G	180	260	370	530	120	190	280	450	-	-	-	-
4	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	140	140	140	140	-	140	140	140
	S1G	210	300	310	310	150	220	310	310	-	150	220	310
	S2G	210	300	410	430	150	220	310	430	-	150	220	360
	S3G	210	300	410	530	150	220	310	480	-	150	220	360
5	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	140	140	140	140	140	140	140	140	-	140	140	140
	S1G	170	230	290	310	170	210	290	310	-	170	250	310
	S2G	170	230	290	430	170	210	290	430	-	170	250	390
	S3G	170	230	290	430	170	210	290	440	-	170	250	390
6	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	140	140	140	140	-	140	140	140
	S1G	-	-	-	-	150	210	280	310	-	180	250	280
	S2G	-	-	-	-	150	210	280	430	-	180	250	360
	S3G	-	-	-	-	150	210	280	430	-	180	250	360
7	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	140	140	140	140	-	140	140	140
	S1G	-	-	-	-	150	210	280	310	-	180	230	270
	S2G	-	-	-	-	150	210	280	400	-	180	240	340
	S3G	-	-	-	-	150	210	280	400	-	180	240	340
8	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	140	140	140
	S1G	-	-	-	-	-	-	-	-	-	160	220	260
	S2G	-	-	-	-	-	-	-	-	-	160	220	290
	S3G	-	-	-	-	-	-	-	-	-	160	220	290
9	S0	-	-	-	-	-	-	-	-	-	-	-	-
	S1	-	-	-	-	-	-	-	-	-	-	-	-
	S2	-	-	-	-	-	-	-	-	-	-	-	-
	S3	-	-	-	-	-	-	-	-	-	140	140	140
	S1G	-	-	-	-	-	-	-	-	-	160	200	250
	S2G	-	-	-	-	-	-	-	-	-	160	200	270
	S3G	-	-	-	-	-	-	-	-	-	160	200	270

Tab. 7

Notes:

- Frame height : base ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- At least 2 adjacent bays;
- Maximum shelving height: 2000mm for S0 beams - 2500mm for other beams;
- Maximum centre distance between levels: 500mm for S0 beams - 700mm for other beams;
- Position of reinforcement bars as indicated in Data sheet 10/15/15.

FRAME LOAD BEARING CAPACITY OF BRACED ROWS

The frame load bearing capacity of braced shelving depends on the height difference between the attachment points of the bracing stirrups and the configuration of the loading levels.

There are three possible configurations:

A. Bracing at all levels;
B. Bracing every two levels;
C. Bracing every three levels or more.

The load bearing capacity must be checked by applying the table corresponding to the configuration that most closely adapts to the geometry to be verified. In case of doubt, use the table applicable to configuration **"A"**.

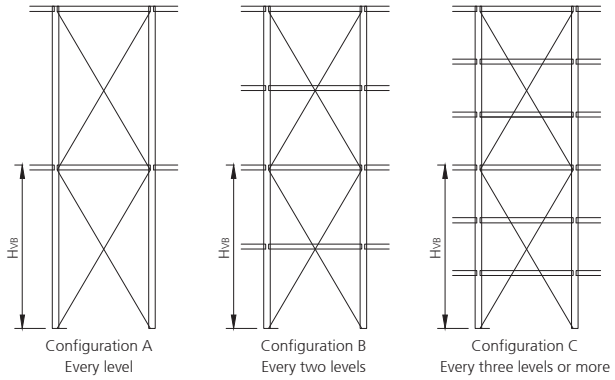
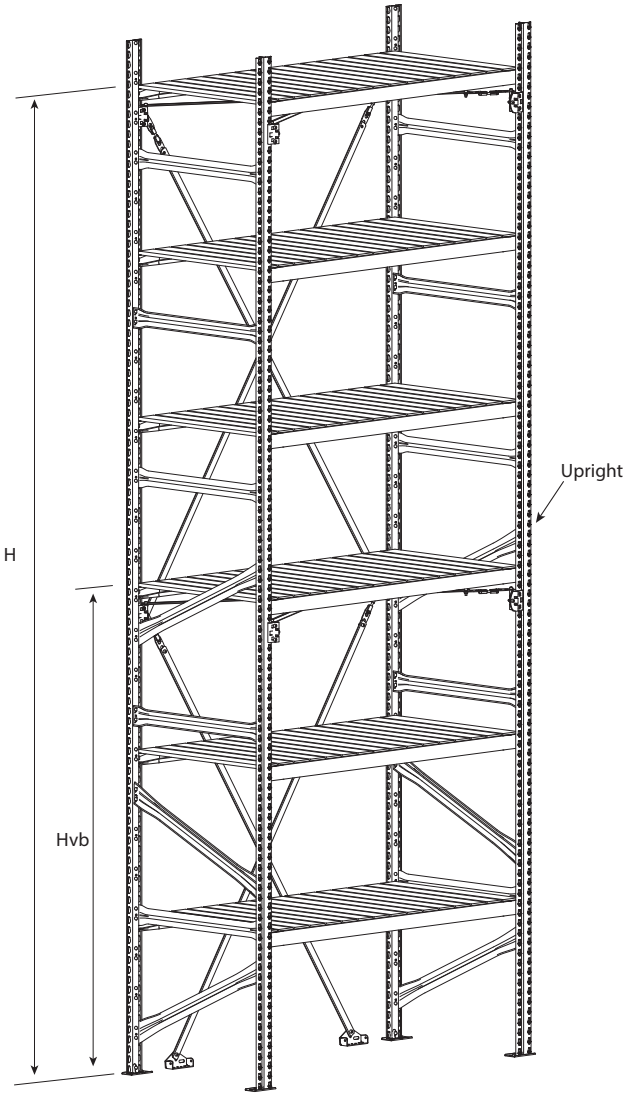


Fig. 1



General notes:

The validity of load bearing capacities is subordinate to compliance with all the prescriptions and all geometrical and application limitations shown in Data sheet 05/05/05 "Calculation, safety and installation prescriptions", Data sheet 05/10/05 "Super 1-2-3 bay geometry", and Data sheet 05/10/10 "Load bearing capacity verification procedure" and to the correct installation of the employed structural components.

Frame load bearing capacity of braced rows - configuration A - Bracing at every level

Upright	H_{cv} [mm]	Frame height [mm]						
		1972	2500	3028	3424	3952	4480	5008
S0	800	450	-	-	-	-	-	-
	900	450	-	-	-	-	-	-
	1000	450	-	-	-	-	-	-
	1100	450	-	-	-	-	-	-
	1200	450	-	-	-	-	-	-
S1	800	550	550	800	-	-	-	-
	900	500	500	750	-	-	-	-
	1000	500	500	700	-	-	-	-
	1100	500	500	700	-	-	-	-
	1200	450	450	650	-	-	-	-
	1300	450	450	650	-	-	-	-
	1400	450	450	600	-	-	-	-
S2	800	750	750	1050	1050	-	-	-
	900	700	700	1050	1050	-	-	-
	1000	700	700	1050	1050	-	-	-
	1100	700	700	1000	1000	-	-	-
	1200	650	650	950	950	-	-	-
	1300	650	650	950	950	-	-	-
	1400	600	650	900	900	-	-	-
	1500	600	600	850	900	-	-	-
S3	800	1150	1150	1600	1600	2000	2400	2400
	900	1050	1050	1600	1600	1900	2300	2300
	1000	1050	1050	1600	1600	1800	2300	2300
	1100	1050	1050	1600	1600	1700	2300	2300
	1200	1050	1050	1500	1550	1550	2000	2000
	1300	1000	1050	1450	1450	1450	1800	1800
	1400	950	1000	1350	1350	1350	1800	1800
	1500	900	950	1250	1300	1300	1750	1750
	1600	800	900	1200	1250	1250	1700	1700

Tab. 1

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- The minimum quantity of bracing per row is shown in Data sheet 05/10/10 "Load bearing capacity verification procedure".

Frame load bearing capacity of braced rows - configuration B - Bracing every two levels

Upright	H_{cv} [mm]	Frame height [mm]						
		1972	2500	3028	3424	3952	4480	5008
S0	800	750	-	-	-	-	-	-
	900	700	-	-	-	-	-	-
	1000	650	-	-	-	-	-	-
	1100	600	-	-	-	-	-	-
	1200	600	-	-	-	-	-	-
	1300	600	-	-	-	-	-	-
	1400	550	-	-	-	-	-	-
S1	800	1150	1200	1300	-	-	-	-
	900	1050	1050	1150	-	-	-	-
	1000	900	950	1050	-	-	-	-
	1100	850	850	950	-	-	-	-
	1200	750	750	900	-	-	-	-
	1300	650	650	850	-	-	-	-
	1400	650	650	800	-	-	-	-
	1500	650	650	750	-	-	-	-
	1600	600	600	750	-	-	-	-
S2	800	1550	1600	1700	1700	-	-	-
	900	1400	1500	1600	1600	-	-	-
	1000	1300	1350	1450	1450	-	-	-
	1100	1200	1200	1350	1350	-	-	-
	1200	1050	1050	1300	1300	-	-	-
	1300	950	950	1250	1250	-	-	-
	1400	950	950	1200	1200	-	-	-
	1500	900	900	1100	1150	-	-	-
	1600	900	900	1100	1150	-	-	-
S3	800	2300	2350	2550	2550	2650	3000	3150
	900	2150	2150	2400	2400	2550	2900	2950
	1000	1950	2000	2250	2250	2450	2800	2800
	1100	1800	1800	2150	2150	2400	2750	2800
	1200	1650	1650	2050	2050	2300	2750	2800
	1300	1500	1500	2000	2000	2200	2750	2800
	1400	1450	1450	1900	1950	2150	2650	2650
	1500	1450	1450	1800	1900	2100	2450	2450
	1600	1400	1400	1750	1850	2000	2300	2300
	1700	1350	1350	1700	1800	1950	2150	2150
	1800	1300	1300	1650	1750	1900	2100	2100

Tab. 2

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- The minimum quantity of bracing per row is shown in Data sheet 05/10/10 "Load bearing capacity verification procedure".

Frame load bearing capacity of braced rows - configuration C - Bracing every three levels or more

Upright	H_{cv} [mm]	Frame height [mm]						
		1972	2500	3028	3424	3952	4480	5008
S0	800	950	-	-	-	-	-	-
	900	850	-	-	-	-	-	-
	1000	800	-	-	-	-	-	-
	1100	750	-	-	-	-	-	-
	1200	700	-	-	-	-	-	-
	1300	700	-	-	-	-	-	-
	1400	650	-	-	-	-	-	-
	1500	600	-	-	-	-	-	-
S1	800	1350	1450	1500	-	-	-	-
	900	1300	1400	1400	-	-	-	-
	1000	1250	1350	1350	-	-	-	-
	1100	1200	1250	1300	-	-	-	-
	1200	1150	1200	1200	-	-	-	-
	1300	1050	1100	1150	-	-	-	-
	1400	1000	1050	1100	-	-	-	-
	1500	950	1000	1050	-	-	-	-
	1600	900	950	1000	-	-	-	-
S2	800	1850	1900	2000	2100	-	-	-
	900	1800	1850	1950	2050	-	-	-
	1000	1750	1800	1850	1950	-	-	-
	1100	1650	1700	1750	1850	-	-	-
	1200	1550	1600	1700	1750	-	-	-
	1300	1500	1500	1600	1650	-	-	-
	1400	1400	1450	1550	1550	-	-	-
	1500	1350	1400	1450	1500	-	-	-
	1600	1250	1300	1400	1400	-	-	-
	1700	1150	1250	1350	1350	-	-	-
S3	800	2650	2700	2950	3000	3350	3500	3500
	900	2600	2650	2850	2950	3200	3300	3350
	1000	2550	2550	2800	2850	3100	3150	3150
	1100	2450	2450	2700	2750	3000	3000	3100
	1200	2350	2350	2600	2650	3000	3000	3100
	1300	2200	2250	2500	2550	3000	3000	3050
	1400	2100	2150	2400	2450	3000	3000	3050
	1500	2000	2050	2350	2350	2900	3000	3050
	1600	1900	1950	2250	2250	2750	3000	3050
	1700	1800	1850	2100	2100	2650	3000	3000
	1800	1700	1750	2100	2100	2500	2900	2900

Tab. 3

Notes:

- Frame height : depth ratio greater than 6:1 (up to 7:1) - reduce load bearing capacity by 10%;
- The minimum quantity of bracing per row is shown in Data sheet 05/10/10 "Load bearing capacity verification procedure".

LOAD BEARING CAPACITY OF COMPLETE SHELVES WITH H12 AND H25 PANELS

Load bearing capacity of complete H12-H25 shelves [daN](1)

	L [mm]	450	600							900						
W [mm]		S0 BS2/S0	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
250 320	H12	120	160	160	-	-	-	-	-	200	240	240	240	240	240	240
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	H12	90	125	125	-	-	-	-	-	185	185	185	185	185	185	185
	H25/L	-	200	265	-	-	-	-	-	200	265	390	420	350	420	420
	H25/A	-	200	265	-	-	-	-	-	200	265	390	450	350	520	555
	H25/B	-	200	265	-	-	-	-	-	200	265	390	450	350	520	640
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	520	640
450	H12	85	115	115	-	-	-	-	-	175	175	175	175	175	175	175
	H25/L	-	200	240	-	-	-	-	-	200	265	360	360	350	360	360
	H25/A	-	200	265	-	-	-	-	-	200	265	390	450	350	495	495
	H25/B	-	200	265	-	-	-	-	-	200	265	390	450	350	520	615
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	520	640
500	H12	75	105	105	-	-	-	-	-	155	155	155	155	155	155	155
	H25/L	-	200	210	-	-	-	-	-	200	265	315	315	315	315	315
	H25/A	-	200	265	-	-	-	-	-	200	265	390	435	350	435	435
	H25/B	-	200	265	-	-	-	-	-	200	265	390	450	350	520	540
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	520	640
600	H12	70	95	95	-	-	-	-	-	145	145	145	145	145	145	145
	H25/L	-	170	170	-	-	-	-	-	200	255	255	255	255	255	255
	H25/A	-	200	230	-	-	-	-	-	200	265	345	345	345	345	345
	H25/B	-	200	265	-	-	-	-	-	200	265	390	435	350	435	435
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	520	640
700	H12	60	85	85	-	-	-	-	-	125	125	125	125	125	125	125
	H25/L	-	150	150	-	-	-	-	-	200	225	225	225	225	225	225
	H25/A	-	200	200	-	-	-	-	-	200	265	300	300	300	300	300
	H25/B	-	200	250	-	-	-	-	-	200	265	375	375	350	375	375
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	520	615
800	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	120	120	-	-	-	-	-	180	180	180	180	180	180	180
	H25/A	-	170	170	-	-	-	-	-	200	255	255	255	255	255	255
	H25/B	-	200	210	-	-	-	-	-	200	265	315	315	315	315	315
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	520	525
900	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	150	150	-	-	-	-	-	200	225	225	225	225	225	225
	H25/B	-	190	190	-	-	-	-	-	200	265	285	285	285	285	285
	H25/C	-	200	265	-	-	-	-	-	200	265	390	450	350	465	465
1000	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	130	130	-	-	-	-	-	195	195	195	195	195	195	195
	H25/B	-	170	170	-	-	-	-	-	200	255	255	255	255	255	255
	H25/C	-	200	250	-	-	-	-	-	200	265	375	375	350	375	375
1100	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	120	120	-	-	-	-	-	180	180	180	180	180	180	180
	H25/B	-	150	150	-	-	-	-	-	200	225	225	225	225	225	225
	H25/C	-	200	200	-	-	-	-	-	200	265	300	300	300	300	300
1200	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	100	100	-	-	-	-	-	150	150	150	150	150	150	150
	H25/B	-	120	120	-	-	-	-	-	180	180	180	180	180	180	180
	H25/C	-	170	170	-	-	-	-	-	200	255	255	255	255	255	255

Tab. 1

Notes:

(1) S0 frames: max 300daN/level; S1 frames: max 500daN/level

Load bearing capacity of complete H12-H25 shelves [daN] (1)

W [mm]	L [mm]	1050							1200						
		S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
250 320	H12	170	230	280	280	280	280	280	150	200	275	320	320	320	320
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	H12	170	215	215	215	215	215	215	150	200	250	250	250	250	250
	H25/L	170	230	335	385	350	490	490	150	200	275	320	350	520	560
	H25/A	170	230	335	385	350	520	640	150	200	275	320	350	520	640
	H25/B	170	230	335	385	350	520	640	150	200	275	320	350	520	640
	H25/C	170	230	335	385	350	520	640	150	200	275	320	350	520	640
450	H12	170	205	205	205	205	205	205	150	200	235	235	235	235	235
	H25/L	170	230	335	385	350	420	420	150	200	275	320	350	480	480
	H25/A	170	230	335	385	350	520	575	150	200	275	320	350	520	640
	H25/B	170	230	335	385	350	520	640	150	200	275	320	350	520	640
	H25/C	170	230	335	385	350	520	640	150	200	275	320	350	520	640
500	H12	170	180	180	180	180	180	180	150	200	210	210	210	210	210
	H25/L	170	230	335	365	350	365	365	150	200	275	320	350	420	420
	H25/A	170	230	335	385	350	505	505	150	200	275	320	350	520	580
	H25/B	170	230	335	385	350	520	630	150	200	275	320	350	520	640
	H25/C	170	230	335	385	350	520	640	150	200	275	320	350	520	640
600	H12	170	170	170	170	170	170	170	150	195	195	195	195	195	195
	H25/L	170	230	295	295	295	295	295	150	200	275	320	340	340	340
	H25/A	170	230	335	385	350	400	400	150	200	275	320	350	460	460
	H25/B	170	230	335	385	350	505	505	150	200	275	320	350	520	580
	H25/C	170	230	335	385	350	520	640	150	200	275	320	350	520	640
700	H12	150	150	150	150	150	150	150	150	170	170	170	170	170	170
	H25/L	170	230	260	260	260	260	260	150	200	275	300	300	300	300
	H25/A	170	230	335	350	350	350	350	150	200	275	320	350	400	400
	H25/B	170	230	335	385	350	435	435	150	200	275	320	350	500	500
	H25/C	170	230	335	385	350	520	640	150	200	275	320	350	520	640
800	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	170	210	210	210	210	210	210	150	200	240	240	240	240	240
	H25/A	170	230	295	295	295	295	295	150	200	275	320	340	340	340
	H25/B	170	230	335	365	350	365	365	150	200	275	320	350	420	420
	H25/C	170	230	335	385	350	520	610	150	200	275	320	350	520	640
900	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	170	230	260	260	260	260	260	150	200	275	300	300	300	300
	H25/B	170	230	330	330	330	330	330	150	200	275	320	350	380	380
	H25/C	170	230	335	385	350	520	540	150	200	275	320	350	520	620
1000	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	170	225	225	225	225	225	225	150	200	260	260	260	260	260
	H25/B	170	230	295	295	295	295	295	150	200	275	320	340	340	340
	H25/C	170	230	335	385	350	435	435	150	200	275	320	350	500	500
1100	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	170	210	210	210	210	210	210	150	200	240	240	240	240	240
	H25/B	170	230	260	260	260	260	260	150	200	275	300	300	300	300
	H25/C	170	230	335	350	350	350	350	150	200	275	320	350	400	400
1200	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	170	175	175	175	175	175	175	150	200	200	200	200	200	200
	H25/B	170	210	210	210	210	210	210	150	200	240	240	240	240	240
	H25/C	170	230	295	295	295	295	295	150	200	275	320	340	340	340

Tab. 2

Notes:

(1) S0 frames: max 300daN/level; S1 frames: max 500daN/level

Load bearing capacity of complete H12-H25 shelves [daN] (1)

W [mm]	L [mm]	1350							1500						
		S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
250 320	H12	-	160	215	255	350	360	360	-	130	175	205	350	400	400
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	H12	-	160	215	255	280	280	280	-	130	175	205	310	310	310
	H25/L	-	160	215	255	350	520	630	-	130	175	205	350	520	640
	H25/A	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/B	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
450	H12	-	160	215	255	265	265	265	-	130	175	205	290	290	290
	H25/L	-	160	215	255	350	520	540	-	130	175	205	350	520	600
	H25/A	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/B	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
500	H12	-	160	215	235	235	235	235	-	130	175	205	260	260	260
	H25/L	-	160	215	255	350	470	470	-	130	175	205	350	520	525
	H25/A	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/B	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
600	H12	-	160	215	220	220	220	220	-	130	175	205	240	240	240
	H25/L	-	160	215	255	350	380	380	-	130	175	205	350	425	425
	H25/A	-	160	215	255	350	515	515	-	130	175	205	350	520	575
	H25/B	-	160	215	255	350	520	640	-	130	175	205	350	520	640
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
700	H12	-	160	190	190	190	190	190	-	130	175	205	215	215	215
	H25/L	-	160	215	255	335	335	335	-	130	175	205	350	375	375
	H25/A	-	160	215	255	350	450	450	-	130	175	205	350	500	500
	H25/B	-	160	215	255	350	520	560	-	130	175	205	350	520	625
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
800	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	160	215	255	270	270	270	-	130	175	205	300	300	300
	H25/A	-	160	215	255	350	380	380	-	130	175	205	350	425	425
	H25/B	-	160	215	255	350	470	470	-	130	175	205	350	520	525
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
900	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	160	215	255	335	335	335	-	130	175	205	350	375	375
	H25/B	-	160	215	255	350	425	425	-	130	175	205	350	475	475
	H25/C	-	160	215	255	350	520	640	-	130	175	205	350	520	640
1000	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	160	215	255	290	290	290	-	130	175	205	325	325	325
	H25/B	-	160	215	255	350	380	380	-	130	175	205	350	425	425
	H25/C	-	160	215	255	350	520	560	-	130	175	205	350	520	625
1100	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	160	215	255	270	270	270	-	130	175	205	300	300	300
	H25/B	-	160	215	255	335	335	335	-	130	175	205	350	375	375
	H25/C	-	160	215	255	350	450	450	-	130	175	205	350	500	500
1200	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	160	215	225	225	225	225	-	130	175	205	250	250	250
	H25/B	-	160	215	255	270	270	270	-	130	175	205	300	300	300
	H25/C	-	160	215	255	350	380	380	-	130	175	205	350	425	425

Tab. 3

Notes:

(1) S0 frames: max 300daN/level; S1 frames: max 500daN/level

Load bearing capacity of complete H12-H25 shelves [daN] (1)

W [mm]	L [mm]	1650							1800						
		S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
250 320	H12	-	110	145	170	320	440	440	-	-	-	140	310	430	480
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	H12	-	110	145	170	320	345	345	-	-	-	140	310	375	375
	H25/L	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/A	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/B	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
450	H12	-	110	145	170	320	320	320	-	-	-	140	310	350	350
	H25/L	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/A	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/B	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
500	H12	-	110	145	170	290	290	290	-	-	-	140	310	315	315
	H25/L	-	110	145	170	320	470	575	-	-	-	140	310	430	530
	H25/A	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/B	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
600	H12	-	110	145	170	265	265	265	-	-	-	140	290	290	290
	H25/L	-	110	145	170	320	465	465	-	-	-	140	310	430	510
	H25/A	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/B	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
700	H12	-	110	145	170	235	235	235	-	-	-	140	255	255	255
	H25/L	-	110	145	170	320	410	410	-	-	-	140	310	430	450
	H25/A	-	110	145	170	320	470	550	-	-	-	140	310	430	530
	H25/B	-	110	145	170	320	470	580	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
800	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	110	145	170	320	330	330	-	-	-	140	310	360	360
	H25/A	-	110	145	170	320	465	465	-	-	-	140	310	430	510
	H25/B	-	110	145	170	320	470	575	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
900	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	110	145	170	320	410	410	-	-	-	140	310	430	450
	H25/B	-	110	145	170	320	470	520	-	-	-	140	310	430	530
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
1000	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	110	145	170	320	355	355	-	-	-	140	310	390	390
	H25/B	-	110	145	170	320	465	465	-	-	-	140	310	430	510
	H25/C	-	110	145	170	320	470	580	-	-	-	140	310	430	530
1100	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	110	145	170	320	330	330	-	-	-	140	310	360	360
	H25/B	-	110	145	170	320	410	410	-	-	-	140	310	430	450
	H25/C	-	110	145	170	320	470	550	-	-	-	140	310	430	530
1200	H12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H25/A	-	110	145	170	275	275	275	-	-	-	140	300	300	300
	H25/B	-	110	145	170	320	330	330	-	-	-	140	310	360	360
	H25/C	-	110	145	170	320	465	465	-	-	-	140	310	430	510

Tab. 4

Notes:

(1) S0 frames: max 300daN/level; S1 frames: max 500daN/level

LOAD BEARING CAPACITY OF COMPLETE SHELVES WITH H25 50% PERFORATED PANELS

Load bearing capacity of complete H25 50% perforated shelves [daN] (1)

	W [mm]	600							900						
D [mm]		S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
400	H25/C	200	265	-	-	-	-	-	200	265	390	450	350	520	640
450	H25/D	200	265	-	-	-	-	-	200	265	390	450	350	520	640
500	H25/C	200	265	-	-	-	-	-	200	265	390	450	350	520	640
	H25/D	200	265	-	-	-	-	-	200	265	390	450	350	520	640
600	H25/C	200	265	-	-	-	-	-	200	265	390	450	350	520	585
	H25/D	200	265	-	-	-	-	-	200	265	390	450	350	520	640
700	H25/C	200	265	-	-	-	-	-	200	265	390	420	350	420	420
	H25/D	200	265	-	-	-	-	-	200	265	390	450	350	465	465
800	H25/C	200	210	-	-	-	-	-	200	265	315	315	315	315	315
	H25/D	200	230	-	-	-	-	-	200	265	345	345	345	345	345
900	H25/C	160	160	-	-	-	-	-	200	240	240	240	240	240	240
	H25/D	180	180	-	-	-	-	-	200	265	270	270	270	270	270
1000	H25/C	130	130	-	-	-	-	-	195	195	195	195	195	195	195
	H25/D	140	140	-	-	-	-	-	200	210	210	210	210	210	210
1100	H25/C	100	100	-	-	-	-	-	150	150	150	150	150	150	150
	H25/D	120	120	-	-	-	-	-	180	180	180	180	180	180	180
1200	H25/C	90	90	-	-	-	-	-	135	135	135	135	135	135	135
	H25/D	100	100	-	-	-	-	-	150	150	150	150	150	150	150

Tab. 1

Load bearing capacity of complete H25 50% perforated shelves [daN] (1)

	W [mm]	1200							1500						
D [mm]		S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G	S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
400	H25/C	150	200	275	320	350	520	640	-	130	175	205	350	520	640
450	H25/D	150	200	275	320	350	520	640	-	130	175	205	350	520	640
500	H25/C	150	200	275	320	350	520	640	-	130	175	205	350	520	640
	H25/D	150	200	275	320	350	520	640	-	130	175	205	350	520	640
600	H25/C	150	200	275	320	350	520	640	-	130	175	205	350	520	640
	H25/D	150	200	275	320	350	520	640	-	130	175	205	350	520	640
700	H25/C	150	200	275	320	350	520	560	-	130	175	205	350	520	640
	H25/D	150	200	275	320	350	520	620	-	130	175	205	350	520	640
800	H25/C	150	200	275	320	350	420	420	-	130	175	205	350	520	525
	H25/D	150	200	275	320	350	460	460	-	130	175	205	350	520	575
900	H25/C	150	200	275	320	320	320	320	-	130	175	205	350	400	400
	H25/D	150	200	275	320	350	360	360	-	130	175	205	350	450	450
1000	H25/C	150	200	260	260	260	260	260	-	130	175	205	325	325	325
	H25/D	150	200	275	280	280	280	280	-	130	175	205	350	350	350
1100	H25/C	150	200	200	200	200	200	200	-	130	175	205	250	250	250
	H25/D	150	200	240	240	240	240	240	-	130	175	205	300	300	300
1200	H25/C	150	180	180	180	180	180	180	-	130	175	205	225	225	225
	H25/D	150	200	200	200	200	200	200	-	130	175	205	250	250	250

Tab. 2

Notes:

(1) S0 frames: max 350daN/level; S1 frames: max 500daN/level

Load bearing capacity of complete H25 50% perforated shelves [daN] (1)

	W [mm]	1800						
D [mm]		S0 BS2/S0	S1 BS2/S1	S2 BS2/S2	S3 BS3/S3	S1G	S2G	S3G
400	H25/C	-	-	-	140	310	430	530
450	H25/D	-	-	-	140	310	430	530
500	H25/C	-	-	-	140	310	430	530
	H25/D	-	-	-	140	310	430	530
600	H25/C	-	-	-	140	310	430	530
	H25/D	-	-	-	140	310	430	530
700	H25/C	-	-	-	140	310	430	530
	H25/D	-	-	-	140	310	430	530
800	H25/C	-	-	-	140	310	430	530
	H25/D	-	-	-	140	310	430	530
900	H25/C	-	-	-	140	310	430	480
	H25/D	-	-	-	140	310	430	530
1000	H25/C	-	-	-	140	310	390	390
	H25/D	-	-	-	140	310	420	420
1100	H25/C	-	-	-	140	300	300	300
	H25/D	-	-	-	140	310	360	360
1200	H25/C	-	-	-	140	270	270	270
	H25/D	-	-	-	140	300	300	300

Tab. 3

Notes:

(1) S0 frames: max 350daN/level; S1 frames: max 500daN/level