

LOAD-BEARING ARCHED SHEET T45-30L-905



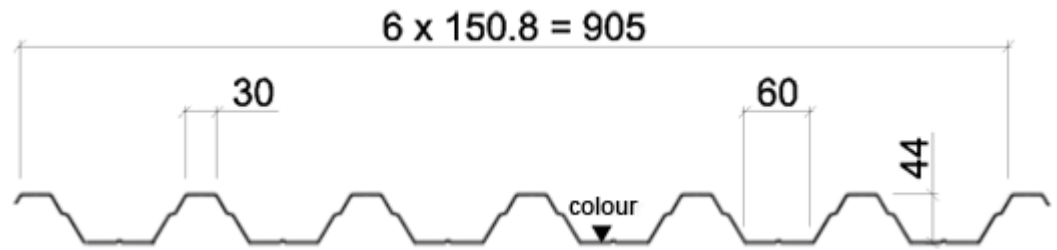
As one of the few manufacturers of load-bearing arched sheets on the market, we offer smooth arched profiles for curved structures. This product enables curved structures and surfaces for roofs and claddings.

Applications:

- Canopies
- Entrances
- Spectator stands.

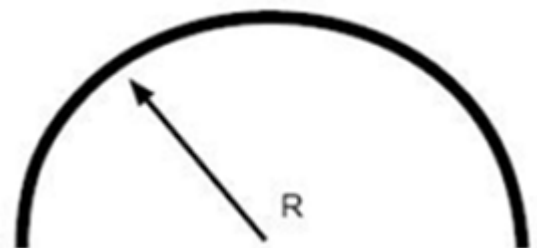
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PROPERTIES



Model name	Load-Bearing Arched Sheet T45-30L-905
Product code	T45-30L-905
Height	44 mm
Width of valley	60 mm
Width of crown	30 mm
Effective width	905 mm
Minimum length	2800 mm
Maximum Length	15000 mm
Quality control	Factory production control according to EN 1090-1 and EN 1090-4
Tolerances	Dimensions and shape according to EN 1090-4, material thickness according to EN 10143
CE Marking	EN1090-1
Execution class	EXC1, EXC2

MINIMUM RADIUS



Material thickness (mm)	Rmin (mm)
0.7	17500
0.9	5500

MATERIALS

Material thickness (mm)	Steel grade	Zinc (g/m ²)	Surface treatment	Corrosion class, interior	Corrosion class, exterior	Colours	Weight (kg/m ²)
0.7	S350	Z275	Galvanized	C2	-	-	7.59
0.7	S350	Z275	Polyester 25	C3	C3	RR20	7.59
0.7	S350	Z275	GreenCoat Pural		C4	RR21, RR23, RR33	7.59
0.9	S350	Z275	Galvanized	C2	-	-	9.76
0.9	S350	Z275	Polyester 25	C3	C3	RR20	9.76

Note: The reverse sides of the colour coated sheets are painted as standard with 2-layer grey backside coating

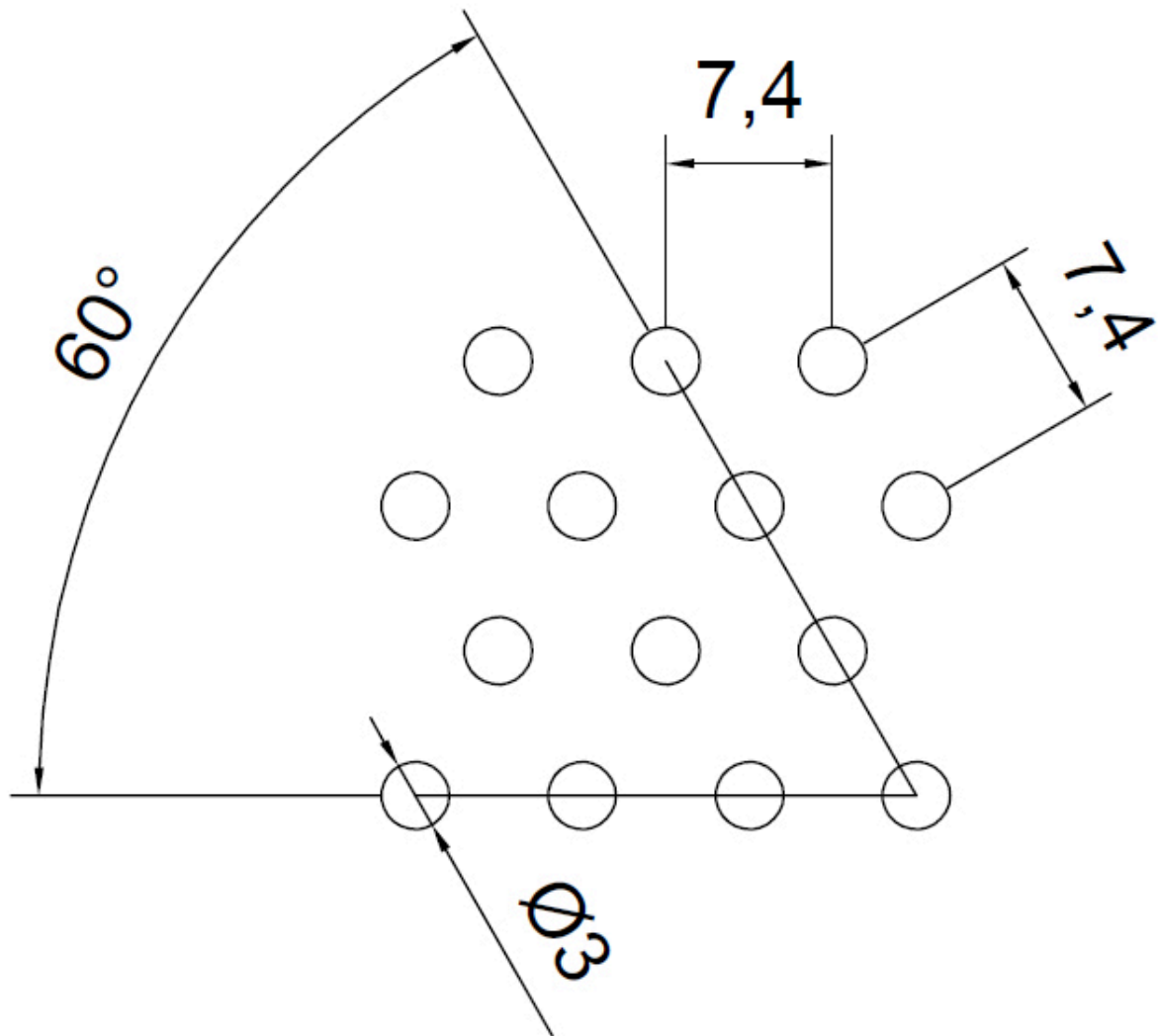
PROTECTION AGAINST CORROSION

Environment	Coating
Interior applications in environments with corrosivity category C1, C2 according to EN ISO 12944-2 standard and A1, A2 according to EN 10169 standard	Steel sheets with zinc coating of 100 g/m ² and with polyester coating SP 15, thickness 15 µm
Interior applications in environments with corrosivity category C1, C2, C3 according to EN ISO 12944-2 standard and A1, A2, A3 according to EN 10169 standard	Steel sheets with zinc coating of 275 g/m ² and with polyester coating SP 25, thickness 25 µm

PERFORATION

PERFORATION

Standard degree of perforation (within the area perforated) is 15%. Perforations are 3 mm in diameter and their arrangement is based on an equilateral triangle with a side of 7.4 mm.



Perforation pattern Rv 3.0 - 7.4; degree of perforation = 15% within the area perforated.

CORROSION RESISTANCE

Perforated trapezoidal profiles ought to be applied in accordance with technical specifications draw up to comply with obligatory standards, building regulations and assembly instructions.

Due to requirement regarding corrosion resistance perforated steel sheets may be applied only indoors and as follows:

Galvanized steel sheets with zinc coating 100 g/m² and organic coating SP 15 (polyester 15 µm) or Galvanized steel sheets with zinc coating 275 g/m² and organic coating SP 25 (polyester 25 µm) - in corroding medium C1 and C2 as per EN ISO 12944.

LOAD BEARING PROFILE APPLICATION

Load bearing profiles are usually applied in multi layer roofing constructions. Web perforation leads to decreased strength parameters in

the case of load bearing trapezoidal sheets. Use of Poimu software is recommended when determining the load capacity of perforated profiles: this software enables trapezoidal sheets within a structure to be dimensioned and optimized. For more information on Poimu visit software center and download Poimu.

Sound absorption is similar to all profiles. However, small differences in sound insulation may occur dependent on profile height.

LOW PROFILE APPLICATION

Acoustic profiled sheets have their whole surface perforated uniformly and are applied as interior facings of multi layer wall constructions and ceilings. They are characterized by a high sound insulation coefficient (150 - 4000 Hz). Application of perforated trapezoidal profiles results in improved acoustic conditions in such buildings as canteens and sports or production halls. Regulation of reverberation time is also possible through application of an appropriate quantity of perforated sheets in ration to non-perforated sheets.

ACOUSTIC ABSORPTION COEFFICIENT, ABSORPTION CLASS

Acoustic absorption coefficient α_s was determined on the basis of ISO 354:2003. Absorption class was determined on the basis of EN 11654:1997.

Tables 1 - 3 present acoustic absorption coefficients and absorption class for the relevant trapezoidal profiles and a construction corresponding to them. Specimens are names according to trapezoidal profile.

TABLE 1. ABSORPTION COEFFICIENT AND CLASS FOR CONSTRUCTION

Absorption coefficient at octave bands

Specimen	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	Absorption class
T20 - vapour barrier - rock wool 100mm -100kg/m ³	0.22	0.70	0.89	0.85	0.79	0.45	0.18	D
T45 - vapour barrier - rock wool 100mm -100kg/m ³	0.25	0.73	0.93	0.89	0.84	0.48	0.18	D
T130 - vapour barrier - rock wool 100mm -100kg/m ³	0.29	0.85	0.98	0.86	0.35	0.21	0.09	E

T153 - vapour barrier - rock wool 100mm -100kg/m ³	0.28	0.83	0.97	0.85	0.41	0.22	0.08	E
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TABLE 2. ABSORPTION COEFFICIENT AND CLASS FOR CONSTRUCTION

Absorption coefficient at octave bands

Specimen	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	Absorption class
T20 - rock wool 100mm -100kg/m ³	0.18	0.74	0.94	0.92	0.93	0.94	0.82	A
T20 - sound absorbing mat 120g/m ³ - vapour barrier - rock wool 100mm -100kg/m ³	0.20	0.63	0.82	0.84	0.88	0.70	0.46	C
T153 - rock wool 100mm -100kg/m ³	0.23	0.63	0.82	0.84	0.88	0.70	0.46	C
T153 - sound absorbing mat 120g/m ³ - vapour barrier - rock wool 100mm -100kg/m ³	0.24	0.80	0.97	0.86	0.49	0.30	0.20	D
T153 - sound	0.05	0.20	0.54	0.79	0.44	0.31	0.24	D

absorbing mat 120g/m ³ - sound absorbing mat 120g/m ³ - vapour barrier - EPS 60S Roof 100mm								
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TABLE 3. ABSORPTION COEFFICIENT AND CLASS FOR CONSTRUCTION

Absorption coefficient at octave bands

Specimen	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	Absorption class
T153 - rock wool 50mm-150kg/ m ³ - vapour barrier - rock wool 50mm -110kg/m ³	0.20	0.69	0.79	0.77	0.45	0.29	0.26	D

MATERIAL CHARACTERISTICS FOR SPECIMEN LAYERS

- Ruukki trapezoidal profile
- Vapour barrier (0.25mm, 170g/m²)
- Mineral wool - description given for every specimen in the tables
- EPS 60S Roof (15kg/m³)

ROOF SENSOR

INTRODUCTION TO RUUKKI ROOF SENSOR SYSTEM

The purpose and aim of the Ruukki® Roof Sensor System is to measure and visualize the snow load on roofs constructed with Ruukki load bearing sheets. The system provides valuable information for safety and management decisions concerning the building. It's accessory for all Ruukki load bearing sheets and is available for new and old roofs that have access to the lower surface of the sheeting. The system is easy to install and use and there is no need for further monthly service fees.





Following corner stones are needed in the system

1. In structural design, Ruukki's POIMU roof dimensioning program must be used

2. Ruukki Roof Sensors location must be defined by the structural designer and sensors appropriately fitted by the installer
3. The parameters needed in system configuration are defined in POIMU program


After the sensors installation and system configuration, the system gives warnings when designers defined characteristic snow load level have been reached. Further warnings will be given well before load bearing sheeting is approaching its ultimate capacity. Warnings are given by visual light on the roof level and through user interface in web pages in a local network.

DOCUMENTATION

-  **02 APR, 2019**
Ruukki Roof Sensor users guide
PDF, 218.54 KB
-  **02 APR, 2019**
Ruukki Roof Sensor installation instruction
PDF, 2.87 MB
-  **27 NOV, 2018**
Ruukki Roof Sensor infographic
PDF, 544.66 KB
-  **27 NOV, 2018**
Ruukki Roof Sensor positioning table
DOCX, 94.76 KB

ACCESSORIES

Accessories for load bearing sheets include e.g. flashings, fasteners, gaskets and sealing flanges. These accessories ensure fast assembly, fastening reliability, joint tightness.

-  **15 SEP, 2016**
Profiled sheets and purlins accessories
PDF, 4.80 MB

DESIGN TOOLS

To make both architectural and structural design work easier, with accurate product information in 3D form, we offers a selection of CAD / BIM -objects and software tools, to be downloaded from the Software Toolbox portal.

READY MODELLED BIM OBJECTS

- Download objects for ArchiCAD
- Download objects for Revit

DIMENSIONING SOFTWARE POIMU

We offer excellent dimensioning software, Poimu, which allows you to optimise product choice according to the Eurocode. Simply by defining some basic input data you can select a load-bearing sheet for their needs from Ruukki's selection. This quick

optimisation tool covers 1-, 2-span and continuous structures and gives the exact solution as to what sheet should be used, as well as its length.

Download Poimu

DETAIL DRAWING (.DWG)



06 MAY, 2016

Ruukki load-bearing sheet drawings
ZIP, 8.47 MB

DETAIL DRAWING (.PDF)



06 MAY, 2016

Ruukki_load-bearing_sheet-drawings
PDF, 7.01 MB

INSTRUCTIONS

ASSEMBLY INSTRUCTIONS

Assembly instructions document includes information about:

- Packing
- Transportation and unloading
- Storing
- Assembling.



06 MAY, 2016

Ruukki-user-manual-for-lifting-tool
PDF, 1.98 MB



06 MAY, 2016

Ruukki-load-bearing-sheet-anticondence-storage-instructions
PDF, 232.57 KB



06 MAY, 2016

Ruukki load-bearing profiled sheet installation instructions 11_2019
PDF, 902.88 KB

CERTIFICATES & APPROVALS

DECLARATION OF PERFORMANCE



11 MAY, 2016

Declaration of Performance 12/LBS/VIM - Load bearing products



PDF, 494.06 KB