LB 229 rev.8

PTG 120

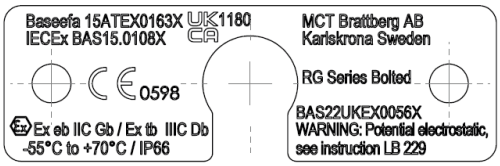
PTG 60

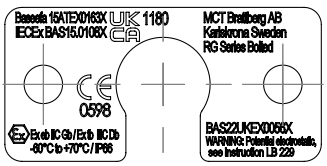
PTG 40

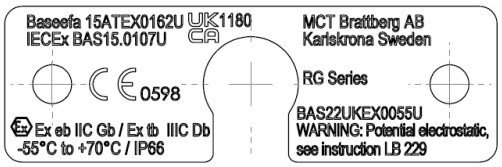
This instruction applies to:

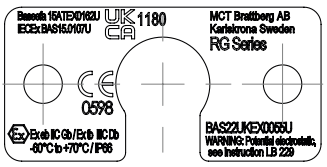
PTG Presswedge
The PTG compresses the system and completing the seal. Manufactured from Lycron with stainless steel (316L) or Black Chromate Mild Steel (1144) hardware.

Marking attached to PTG









This equipment has been assessed against following standards:

IEC 60079-0:2017 Ed 7
IEC 60079-7:2015 Ed 5+amd 1 2018
IEC 60079-31:2013 Ed 2

The purchaser should make the manufacturer aware of any External effects or Aggressive substances that the equipment may be exposed to.

”Conditions of Use” for Ex Equipment or ”schedule of limitations” for Ex Components, if any:

These transits are suitable for use within an operating tempature range of -60˚C to +70˚C.

The blocks must be assembled using the manufacturers supplied tallow lubricant which must be applied to all faces of the sealing block prior to assembly. The transits are only for use with circular cables and circular pipes.

The assembled frame and cables shall be left for a period of 48 hours prior to the installation being energised.

When the frame is used for increased safety or dust protection, the frame shall be suitably sealed (in accordance with IEC 600079-14) to maintain the ingress protection rating of the associated enclosure. The fasteners of all variants shalll be torqued up to 20 Nm.

Non-metallic surfaces shall be protected from electrostatic charging hazards (propagating brush discharges and/or rubbing). Cables and pipes used with the block size range to 15/4 to 15/9 and 120/92 to 120/110 shall be addiotionally clamped to ensure that pulling or twisting is not transmitted to any connections.

When the frame is used for increased security or dust protection, the frame should be properly sealed (in accordance with GB/T 3836.15) to maintain the intrusion protection class for the associated enclosure with the specified EMI gasket.

Cables can be mixed and installed anywhere in the frame, but they must be of the same module in the same row so that a support plate can be placed between each layer of blocks.

Maximum and minimum cable size for each module for RGB, RGG and RGS series of frames.

Module 15	
15/	For cable Ø
4	3,5-4,5
5	4,5-5,5
6	5,5-6,5
7	6,5-7,5
8	7,5-8,5
9	8,5-9,5

Additional clamping required

Module 20	
20/	For cable Ø
4	3,5-4,5
5	4,5-5,5
6	5,5-6,5
7	6,5-7,5
8	7,5-8,5
9	8,5-9,5
10	9,5-10,5
11	10,5-11,5
12	11,5-12,5
13	12,5-13,5
14	13,5-14,5
15	14,5-15,5
16	15,5-16,5

Module 30	
30/	For cable Ø
12	11,5-12,5
13	12,5-13,5
14	13,5-14,5
15	14,5-15,5
16	15,5-16,5
17	16,5-17,5
18	17,5-18,5
19	18,5-19,5
20	19,5-20,5
21	20,5-21,5
22	21,5-22,5
23	22,5-23,5
24	23,5-24,5

Module 40	
40/	For cable Ø
22	21,5-23,5
24	23,5-25,5
26	25,5-27,5
28	27,5-29,5
30	29,5-31,5
32	31,5-33,5
34	33,5-35,5

Module 60	
60/	For cable Ø
32	31,5-33,5
34	33,5-35,5
36	35,5-37,5
38	37,5-39,5
40	39,5-41,5
42	41,5-43,5
44	43,5-45,5
46	45,5-47,5
48	47,5-49,5
50	49,5-51,5
52	51,5-53,5
54	53,5-55,5

Module 90	
90/	For cable Ø
50	49,5-51,5
52	51,5-53,5
54	53,5-55,5
56	55,5-57,5
58	57,5-59,5
60	59,5-61,5
62	61,5-63,5
64	63,5-65,5
66	65,5-67,5
68	67,5-69,5
70	69,5-71,5
72	71,5-73,5
74	73,5-75,5
76	75,5-77,5
78	77,5-79,5
80	79,5-81,5

Module 120	
120/	For cable Ø
72	71,5-73,5
74	73,5-75,5
76	75,5-77,5
78	77,5-79,5
80	79,5-81,5
82	81,5-83,5
84	83,5-85,5
86	85,5-87,5
88	87,5-89,5
90	89,5-91,5

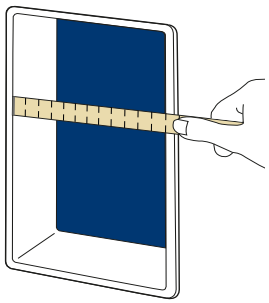
Module 120	
90/	For cable Ø
92	91,5-93,5
94	93,5-95,5
96	95,5-97,5
98	97,5-99,5
100	99,5-101,5
102	101,5-103,5
104	103,5-105,5
106	105,5-107,5
108	107,5-109,5
110	109,5-111,5

Additional clamping required

Add block modules	
20/	For cable Ø
4-8	3,5-8,5
9-13	8,5-13,5
30/	For cable Ø
14-18	13,5-18,5
19-23	18,5-23,5
40/	For cable Ø
24-28	23,5-28,5
29-33	28,5-33,5
60/	For cable Ø
34-38	33,5-38,5
39-43	38,5-43,5
44-48	43,5-49,5
90/	For cable Ø
50-58	49,5-59,5
60-68	59,5-69,5

MCT rectangular transit

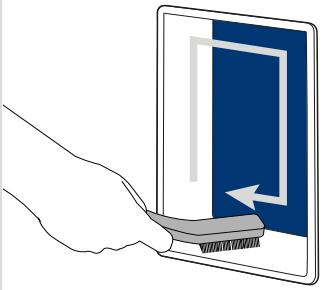
1



Size	H (mm)	W (mm)
1	101 ±1	60,25 ±0,5
2	101 ±1	120,5 ±1
3	159,5 ±1	60,25 ±0,5
4	159,5 ±1	120,5 ±1
5	218 ±1	60,25 ±0,
6	218 ±1	120,5 ±1
7	276,5 ±1	60,25 ±0,5
8	276,5 ±1	120,5 ±1

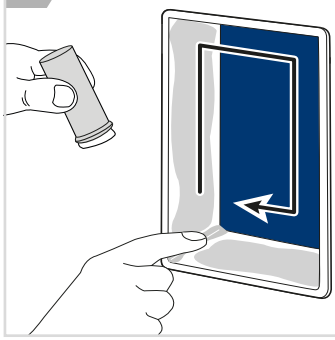
Measure the opening and check that the measurement is within the tolerance range in the table.

2



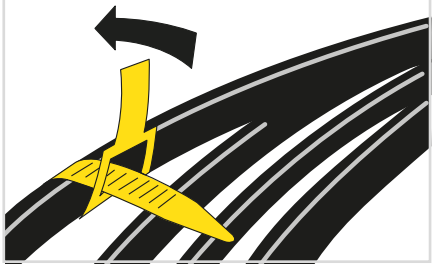
Clean the aperture.

3



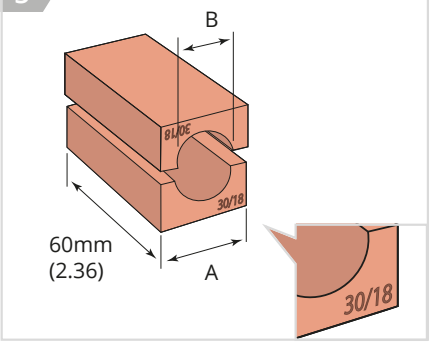
Lubricate the sealing surfaces of the frame with MCT Brattberg Lubricant. Lubricate the corners thoroughly.

4



Measure the diameter of the cables and choose suitable blocks.

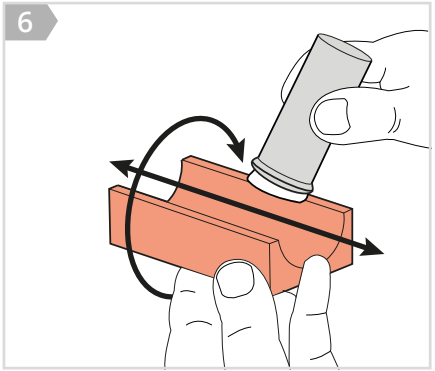
5



Insert Blocks are identified by their width (A) and hole diameter (B).

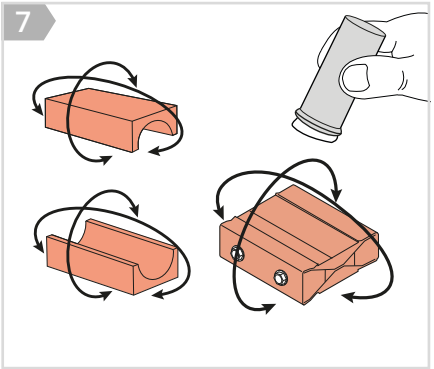
A block that is 30 mm (1.18") wide and has a hole diameter of 18 mm (0,71") is marked 30/18. This marking is cast into the block.

6



Lubricate the sealing surfaces of any block.

7

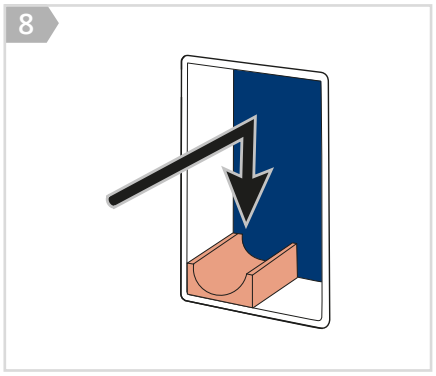


Lubricate the indicated areas of sealing surfaces.

8 Proceed 8

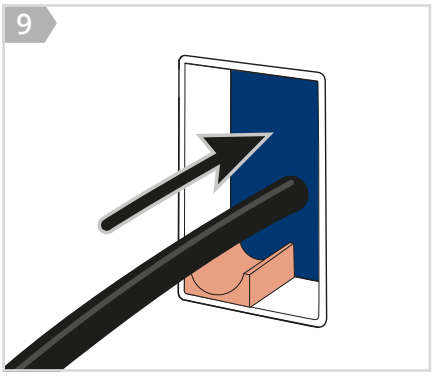
MCT rectangular transit

8



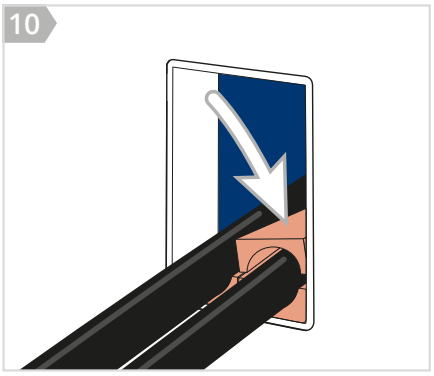
Insert a half insert block.

9



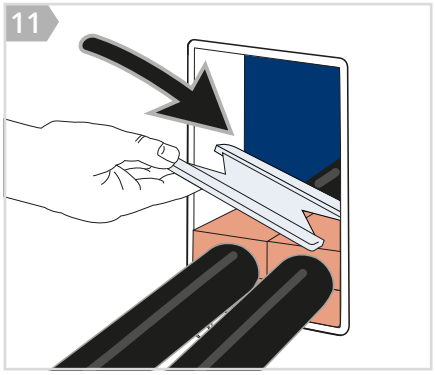
Insert a cable or pipe.

10



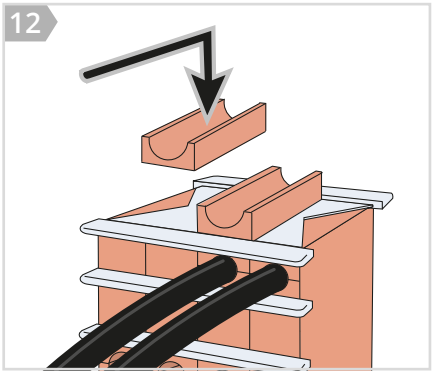
Continue to fill the transit considering your installation plan or RGPlan.

11



If possible, place a stayplate between each row of insert blocks.

12



Ensure that the blocks are secured within the stayplate edges.

13 **Proceed PTG** 13

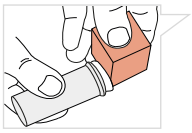
Note:

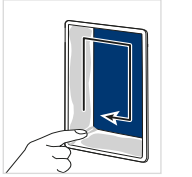
- Note: Please see page 10 for disclaimers.

Disclaimer - pressure & watertight installation

All contact surfaces inside the frame must be cleaned carefully prior to installation.

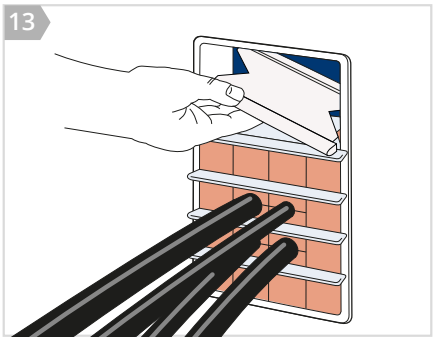
- Make sure the frame is clean and lubricate the inside of the frame thoroughly. Lubricate all Lycron parts carefully with the MCT Brattberg lubricant.
- Place the compression plate in the center so that the rubber can come up between the compression plate and the frame on both sides of the plate
- The penetration must not be subjected to pressure for at least 48 hours after installation. This is to allow the pressure to equalise throughout the penetration. It will take more time for the pressure to equalise at temperatures below 20°C.
- Installation/testing of transits should only be performed by MCT Brattberg trained installers.
- Note: If the installation is subjected to pressure, all components must be replaced after removal and refitting.
- Use of 120/0 below waterline is forbidden.





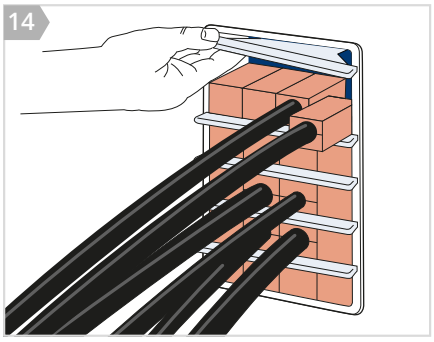
Proceed PTG

13



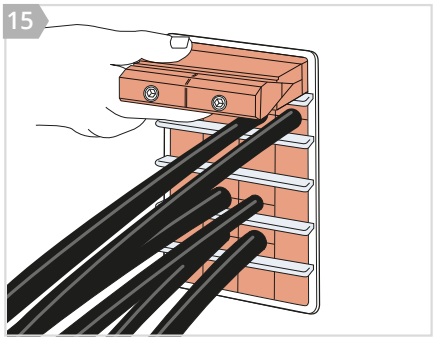
Before inserting the final row of blocks, insert two stayplates.

14



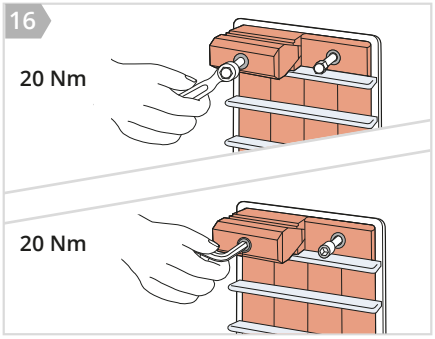
Separate the two stayplates and insert the final row of blocks between the stayplates.

15



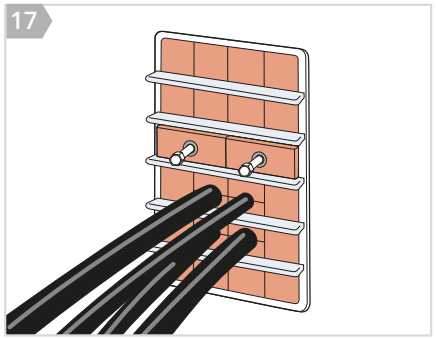
Lubricate and insert PTG.

16



Tighten the screws alternately in small steps until full stop or 20 Nm.

17



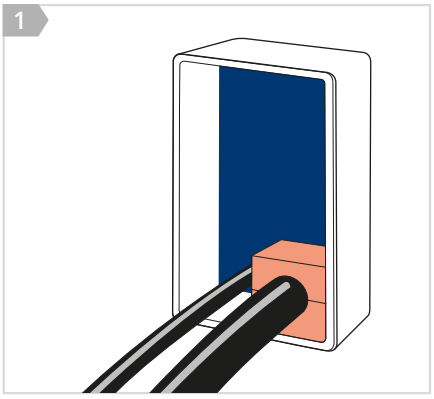
PTG can be inserted anywhere in the frame.

After installation inspection

- Are the PTG screws tightened?
- Is the combined height of blocks correct according to the frame packing height?
- Are all blocks secured by stayplates?
- Is there visible protruding lubricant?

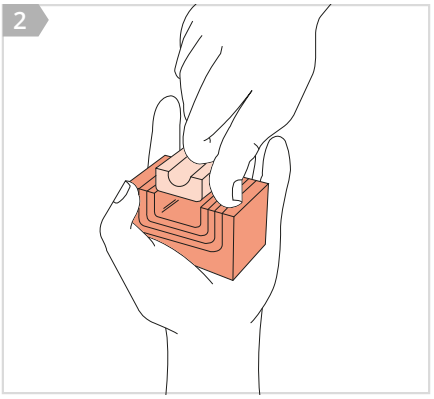
U-Block

1



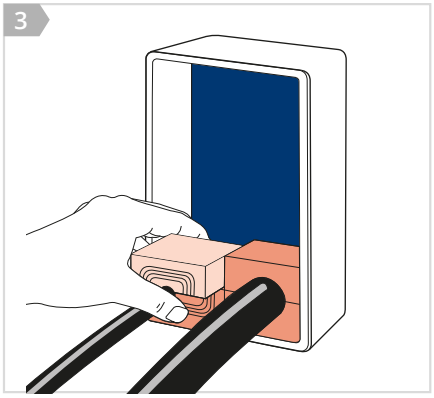
Select a suitable block for the largest cable in the row.

2



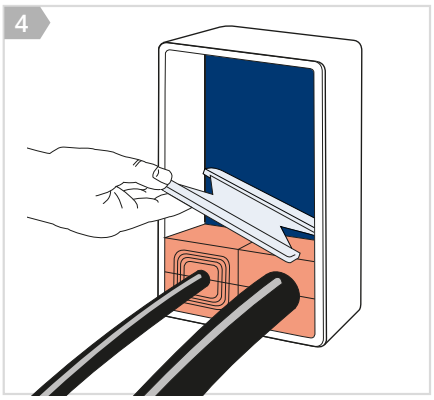
Select a suitable InsertBlock or AddBlock for the small cable. Then create a base using U-Blocks.The external measurements should be the same as the previous block.

3



Start packing the frame.

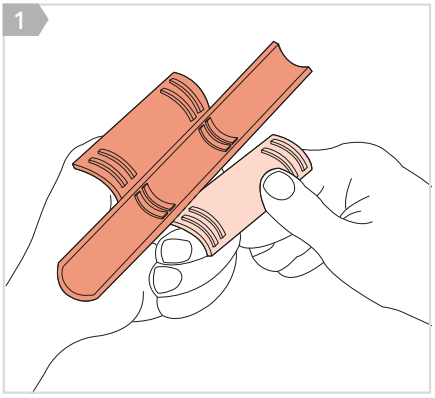
4



Insert stayplates between each row of insert blocks.

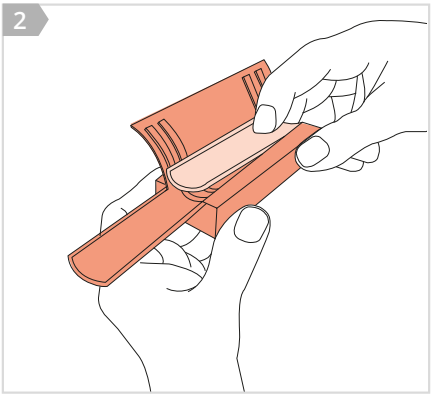
AddBlock

1



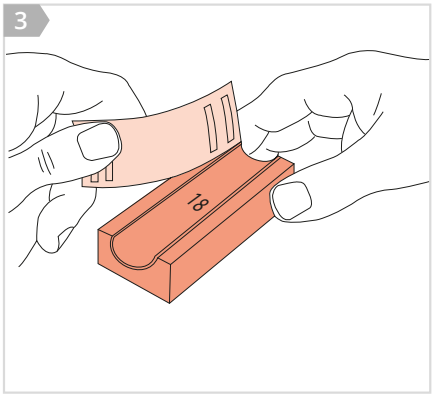
Tear off attached sheet to fit the dimension selected.

2



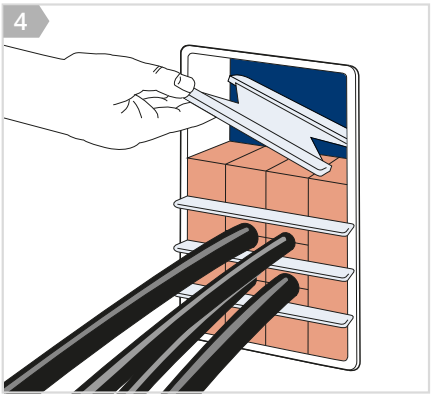
Place sheet into centre slot and affix it with the unique locking device.

3



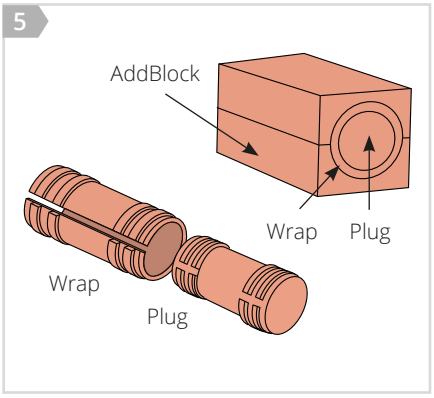
Tear off superfluous sheets.

4



Pack the frame. Place stayplates between each row of blocks.

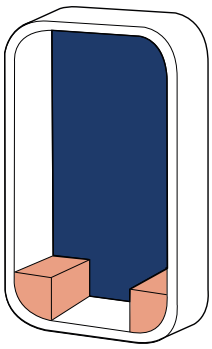
5



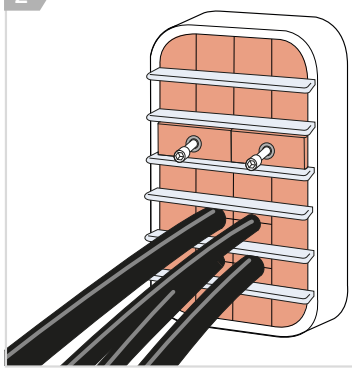
Plugs for AddBlock

RGSC with Presswedge

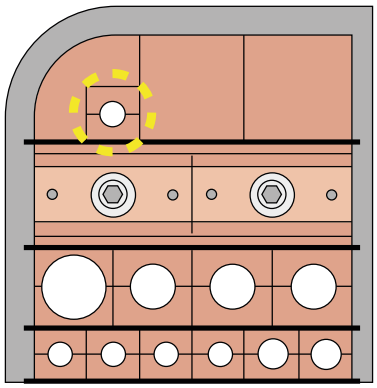
1



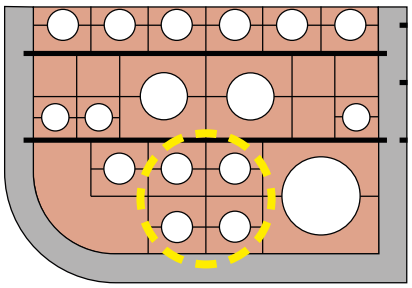
2



Begin packing with the special corner blocks. Proceed as shown in image 3 and then see PTG Presswedge. The PTG presswedge can be placed anywhere except at the top or bottom. At the top row insert the special corner blocks and then the last row of blocks. Tighten the nuts in the PTG to the end or 20 Nm.



For some RGSC corner blocks, support is provided by only one stayplate instead of two – this is fully approved. In fact, in every transit the top and bottom rows of module blocks are always supported by a single stayplate. This is the tandard and correct installation principle.



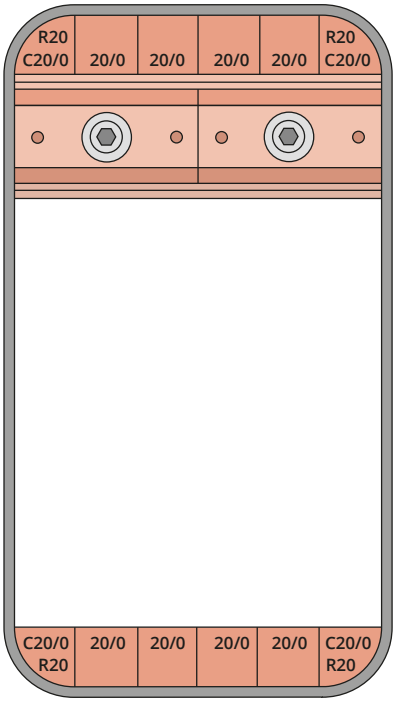
There are cases user is forced to mix modules with the condition of a pressure limitation of 3 Bar, a mix of different size modules beside a large module up to module size 90. This is for situations where it is not possible to use Stayplate due to packing space or design.
Contact MCT Brattberg for more information.

RGSC - Optimal arrangement of blocks

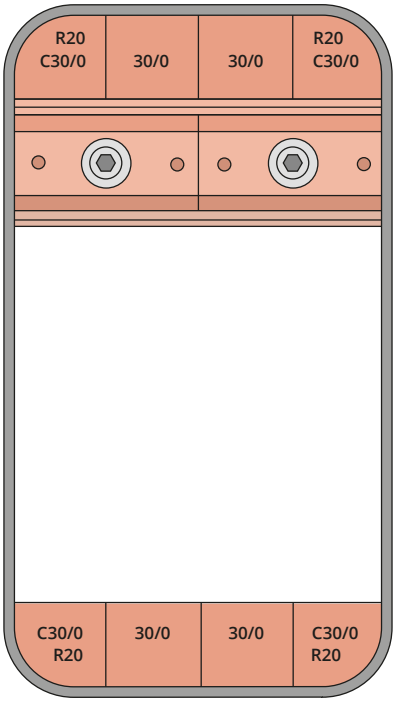
The figures show the optimal arrangement of blocks. As far as possible, all blocks should be installed with the support of a stayplate.

Any arrangements other than the figures shown should be carefully considered. Consult your local surveyor and MCT Brattberg for advice if the design arrangement deviates from the figures.

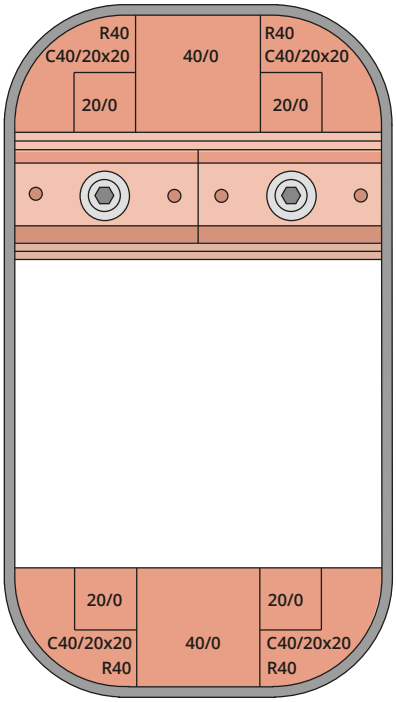
R20 - C20/0



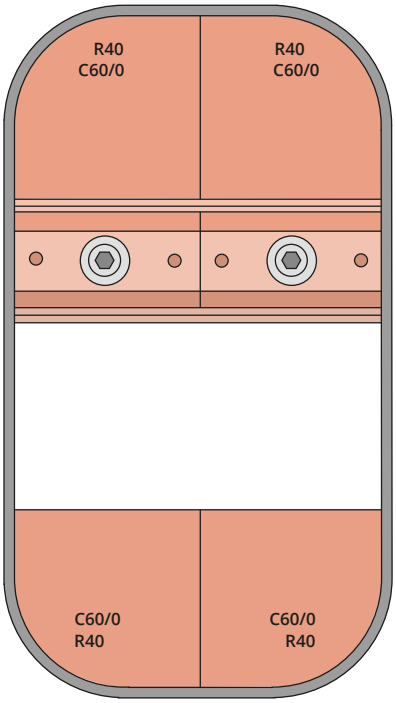
R20 - C30/0



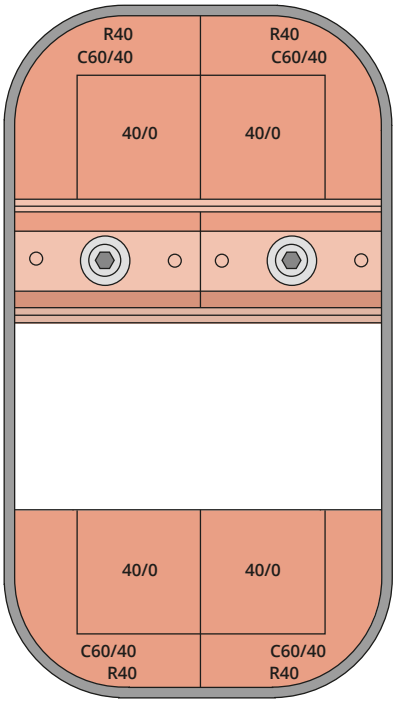
R40 - C40/20x20



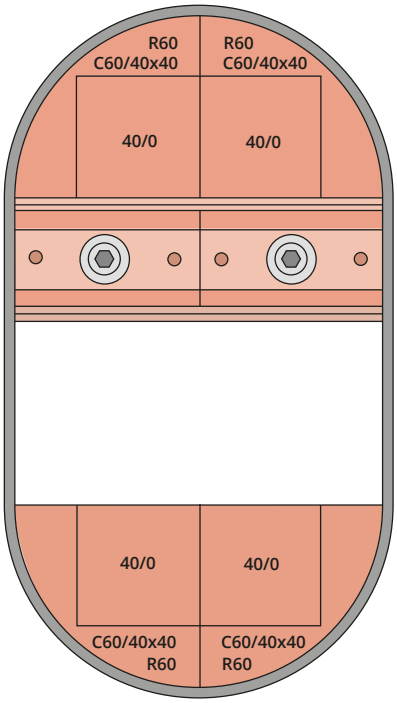
R40 - C60/0



R40 - C60/40x40



R60 - C60/40x40



MCT Brattberg shall not be held responsible for any errors or consequences resulting from the use of incorrect geometric dimensions or cut-outs. In case of any uncertainty, the customer is required to consult MCT Brattberg.
All details must always be verified against the official information drawings provided by MCT Brattberg.

Our products are type-approved, and when installed in accordance with our instructions, they are designed and tested to maintain fire- and pressure-tight integrity under catastrophic conditions. If verification after installation is required, the BTB arrangement may be used; otherwise, please contact MCT Brattberg for further guidance.

MCT Brattberg offers training either on-site or at one of our facilities.
We consider it important to provide training for installers to ensure safety.
Depending on the arrangement, such training is usually provided free of charge.

If the transit needs to be reinstalled, the insert blocks may be reused.
However, this entirely depends on whether the blocks are in a condition that allows them to seal the transit correctly, considering their age or any environmental impact. The installer is responsible for making this assessment.
If the installer feels that a qualified assessment cannot be made, we recommend replacing all insert blocks in the rows above the modification, and all insert blocks in the affected row must also be replaced.

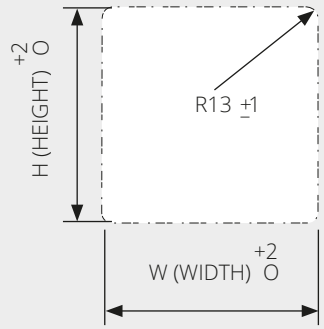
Installation limitations, such as maximum cable or pipe sizes and applicable configurations, are defined in the relevant Type Approval Certificate (TAC). These instructions and drawings shall be read in conjunction with the applicable certificate to ensure compliance with all applicable approval certificates, rules, and project-specific requirements.

For assistance regarding product adaptation and use, please contact MCT Brattberg via switchboard +46 455 37 52 00.

This instruction guide may be subject to revision and changes due to development and changes of the material and products. the data is derived from tests and experience. if not stated as minimum values, the data is average data and should be treated as such. calculations should be verified by actual tests.
the data is furnished without liability for the company and does not constitute a warranty or representation in respect of the material or its use.
The company reserves the right to release new instruction guides in replacement.

RGS Frames

A

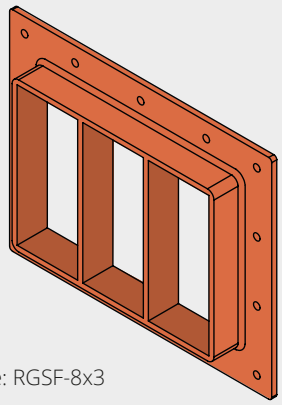


Frame size	H (Height)	W (Width)							
		1x	2x	3x	4x	5x	6x	7x	8x
RGS-1 w60	122	82,25	152,5	152,5	293	363,25	433,5	503,75	574
RGS-1 w40	122	62,25	112,5	112,5	213	263,25	313,5	363,75	414
RGS-2	122	141,5	272	272	533	663,5	794	924,5	1055
RGS-3 w60	181,5	82,25	152,5	152,5	293	363,25	433,5	503,75	574
RGS-3 w40	181,5	62,25	112,5	112,5	213	263,25	313,5	363,75	414
RGS-4	180,5	141,5	272	272	533	663,5	794	924,5	1055
RGS-5 w60	239	82,25	152,5	152,5	293	363,25	433,5	503,75	574
RGS-5 w40	239	62,25	112,5	112,5	213	263,25	313,5	363,75	414
RGS-6	239	141,5	272	272	533	663,5	794	924,5	1055
RGS-7 w60	297,5	82,25	152,5	152,5	293	363,25	433,5	503,75	574
RGS-7 w40	297,5	62,25	112,5	112,5	213	263,25	313,5	363,75	414
RGS-8	297,5	141,5	272	272	533	663,5	794	924,5	1055
RGS-2+2	243		272	272	533	663,5	794	924,5	1055
RGS-2+4	301,5		272	272	533	663,5	794	924,5	1055
RGS-2+6	360		272	272	533	663,5	794	924,5	1055
RGS-2+8	418,5		272	272	533	663,5	794	924,5	1055
RGS-4+4	360		272	272	533	663,5	794	924,5	1055
RGS-4+6	418,5		272	272	533	663,5	794	924,5	1055
RGS-4+8	477		272	272	533	663,5	794	924,5	1055
RGS-6+6	477		272	272	533	663,5	794	924,5	1055
RGS-6+8	535,5		272	272	533	663,5	794	924,5	1055
RGS-8+8	594		272	272	533	663,5	794	924,5	1055

Frame size	H (Height)	1x
RGS-2+2	233	141,5
RGS-2+4	291,5	141,5
RGS-2+6	350	141,5
RGS-2+8	408,5	141,5
RGS-4+4	350	141,5
RGS-4+6	408,5	141,5
RGS-4+8	467	141,5
RGS-6+6	467	141,5
RGS-6+8	525,5	141,5
RGS-8+8	584	141,5

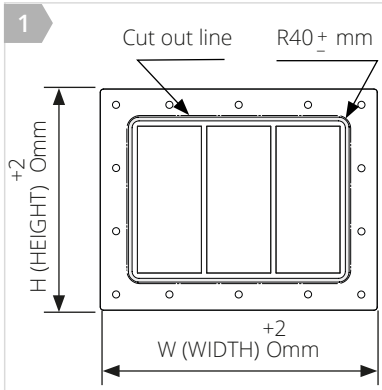
RGSB Frames

A



Example: RGSF-8x3

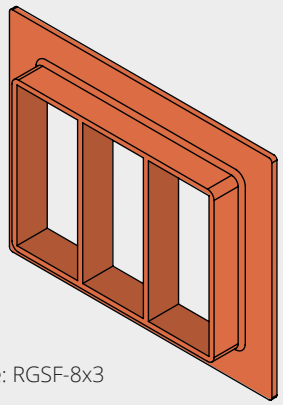
1



Frame size	H (Height)	W (Width)							
		1x	2x	3x	4x	5x	6x	7x	8x
RGSB-2	181	200,5	331	461,5	592	722,5	853	983,5	1114
RGSB-4	239,5	200,5	331	461,5	592	722,5	853	983,5	1114
RGSB-6	298	200,5	331	461,5	592	722,5	853	983,5	1114
RGSB-8	356,5	200,5	331	461,5	592	722,5	853	983,5	1114
RGSB-2+2	302		331	461,5	592	722,5	853	983,5	1114
RGSB-2+4	360,5		331	461,5	592	722,5	853	983,5	1114
RGSB-2+6	419		331	461,5	592	722,5	853	983,5	1114
RGSB-2+8	477,5		331	461,5	592	722,5	853	983,5	1114
RGSB-4+4	419		331	461,5	592	722,5	853	983,5	1114
RGSB-4+6	477,5		331	461,5	592	722,5	853	983,5	1114
RGSB-4+8	536		331	461,5	592	722,5	853	983,5	1114
RGSB-6+6	536		331	461,5	592	722,5	853	983,5	1114
RGSB-6+8	594,5		331	461,5	592	722,5	853	983,5	1114
RGSB-8+8	653		331	461,5	592	722,5	853	983,5	1114
RGSB-2+2	292	200,5							
RGSB-2+4	350,5	200,5							
RGSB-2+6	409	200,5							
RGSB-2+8	467,5	200,5							
RGSB-4+4	409	200,5							
RGSB-4+6	467,5	200,5							
RGSB-4+8	526	200,5							
RGSB-6+6	526	200,5							
RGSB-6+8	584,5	200,5							
RGSB-8+8	643	200,5							

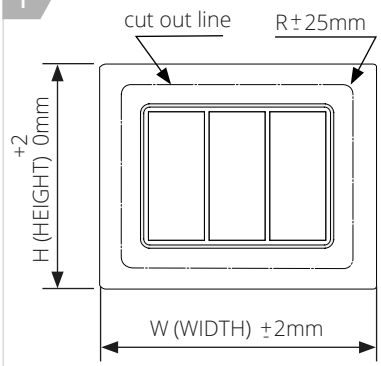
RGSF Frames

A



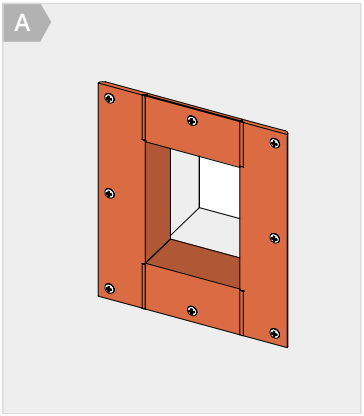
Example: RGSF-8x3

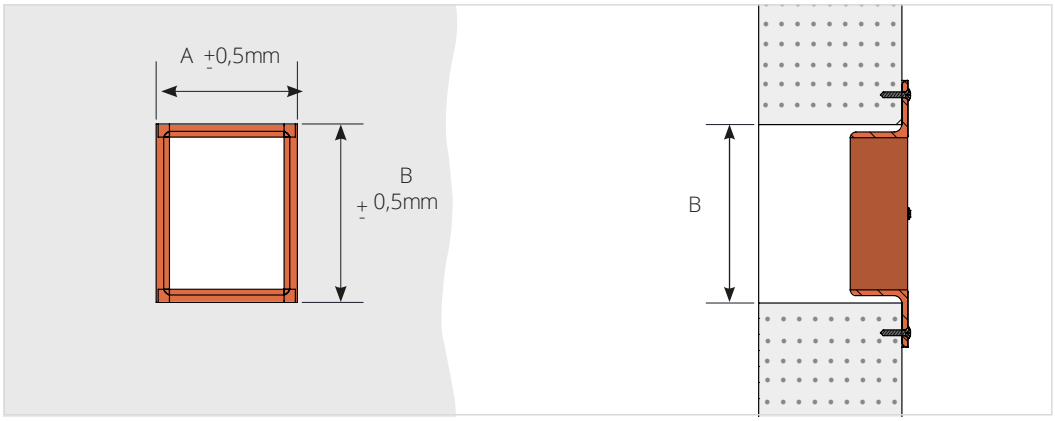
1



Frame size	H (Height)	W (Width)							
		1x	2x	3x	4x	5x	6x	7x	8x
RGSF-2	141	160,5	291	421,5	552	682,5	813	943,5	1074
RGSF-4	199,5	160,5	291	421,5	552	682,5	813	943,5	1074
RGSF-6	258	160,5	291	421,5	552	682,5	813	943,5	1074
RGSF-8	316,5	160,5	291	421,5	552	682,5	813	943,5	1074
RGSF-2+2	262		291	421,5	552	682,5	813	943,5	1074
RGSF-2+4	320,5		291	421,5	552	682,5	813	943,5	1074
RGSF-2+6	379		291	421,5	552	682,5	813	943,5	1074
RGSF-2+8	437,5		291	421,5	552	682,5	813	943,5	1074
RGSF-4+4	379		291	421,5	552	682,5	813	943,5	1074
RGSF-4+6	437,5		291	421,5	552	682,5	813	943,5	1074
RGSF-4+8	496		291	421,5	552	682,5	813	943,5	1074
RGSF-6+6	496		291	421,5	552	682,5	813	943,5	1074
RGSF-6+8	554,5		291	421,5	552	682,5	813	943,5	1074
RGSF-8+8	613		291	421,5	552	682,5	813	943,5	1074
RGSF-2+2	252	160,5							
RGSF-2+4	310,5	160,5							
RGSF-2+6	369	160,5							
RGSF-2+8	427,5	160,5							
RGSF-4+4	369	160,5							
RGSF-4+6	427,5	160,5							
RGSF-4+8	486	160,5							
RGSF-6+6	486	160,5							
RGSF-6+8	544,5	160,5							
RGSF-8+8	603	160,5							

RGB/RGG Frames





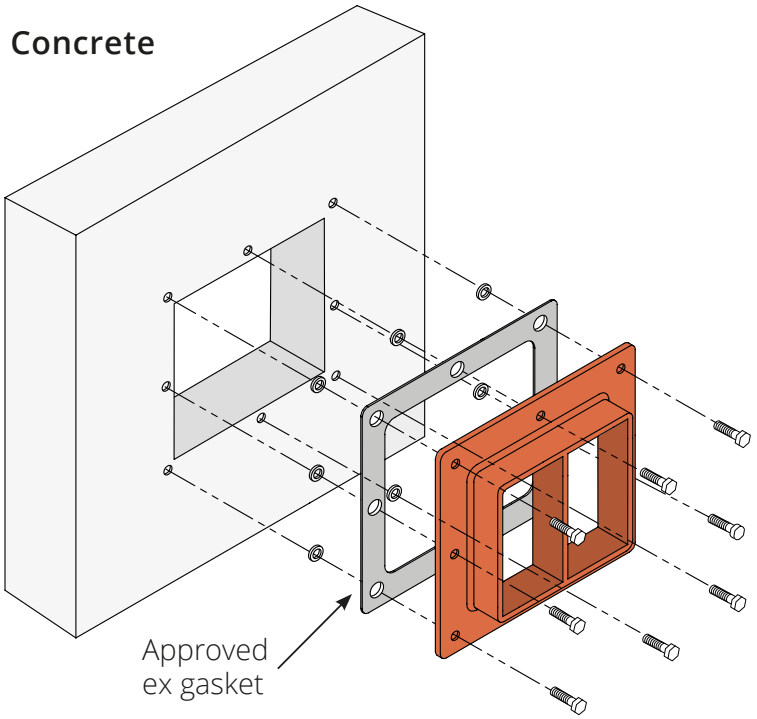
These cutout dimensions are only valid for MCT Brattberg RGB/RGG frames manufactured in 60x60x6 mm anglebar.

Frame size	Cut out cize								
	B (Height	A (width Multiple Frames							
		x1	x2	x3	x4	x5	x6	x7	x8
2	128	148	278	409	539	670	801	932	1063
4	187	148	278	409	539	670	801	932	1063
6	245	148	278	409	539	670	801	932	1063
8	304	148	278	409	539	670	801	932	1063
2+2	239	148	278	409	539	670	801	932	1063
2+4	298	148	278	409	539	670	801	932	1063
2+6	356	148	278	409	539	670	801	932	1063
2+8	415	148	278	409	539	670	801	932	1063
4+4	356	148	278	409	539	670	801	932	1063
4+6	415	148	278	409	539	670	801	932	1063
4+8	473	148	278	409	539	670	801	932	1063
6+6	473	148	278	409	539	670	801	932	1063
6+8	532	148	278	409	539	670	801	932	1063
8+8	590	148	278	409	539	670	801	932	1063

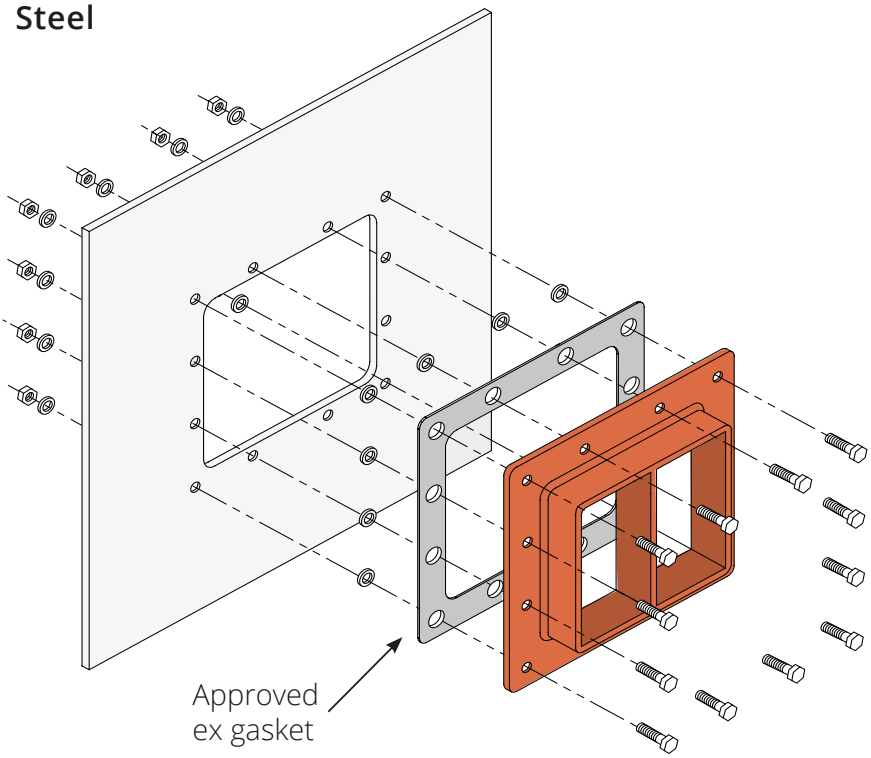
Equipment - X

NOTE: For all MCT Brattberg Brattberg equipment require supplied gasket.

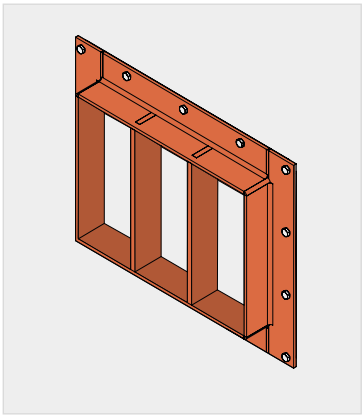
Concrete

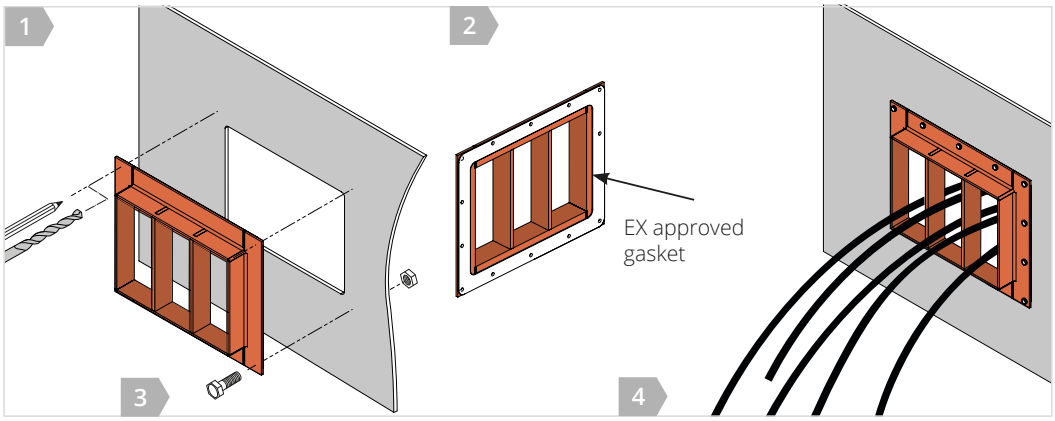


Steel



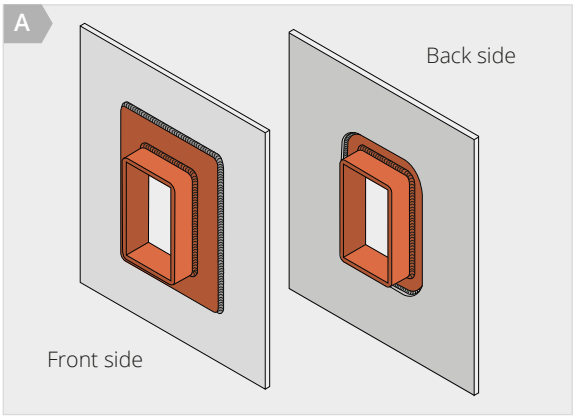
RGG

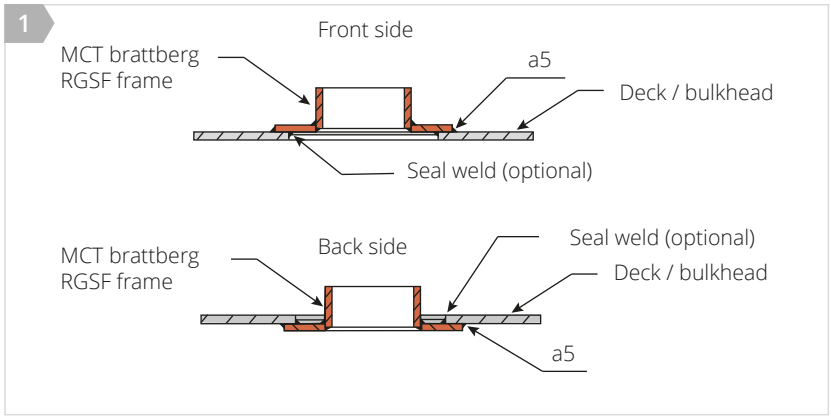




1. Position the frame to the steel plate, mark and drill hole pattern to match the frame.
2. Apply Ex aprroved gasket.
3. Install the frame to the steel plate with M8 bolts, tighten to 20 Nm.
4. Pull cables/pipes thru the frame and install the MCT Brattberg sealing.

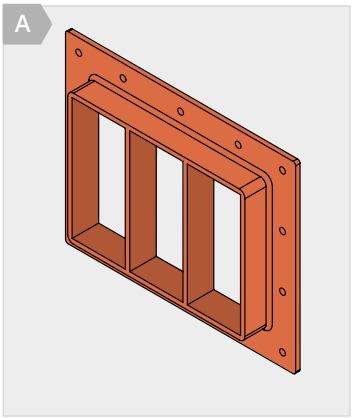
RGSF

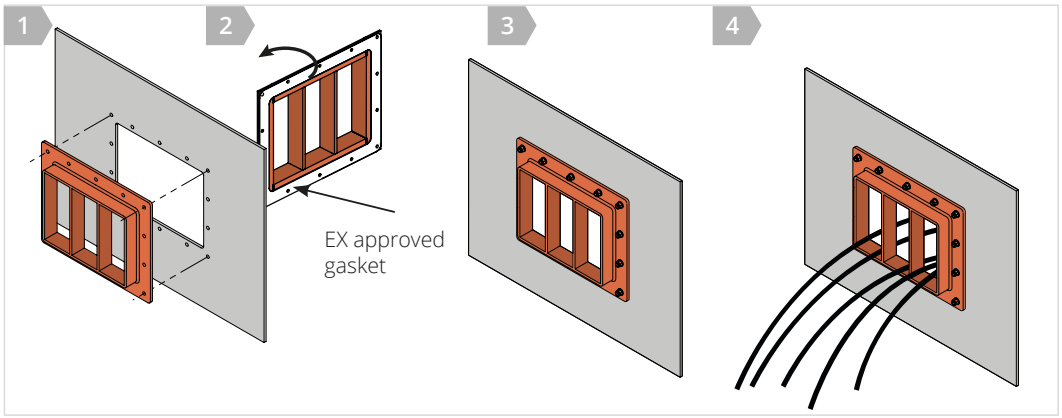




1. Position the RGSF frame flat to the bulkhead or deck.
2. Tack weld on the front side of the frame in each corner and then in every 200 mm between corners.
3. Continue welding around the front side of the frame in practical order.
4. Complete by seal welding around the rear side of the frame (optional).

RGSFB

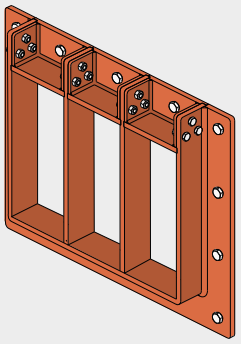




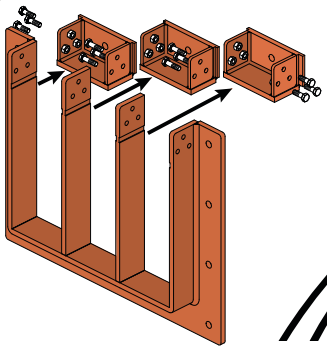
1. Position the frame to the bulkhead/deck, mark and drill hole pattern to match the frame
2. Apply Ex aprroved gasket.
3. Install the frame to the bulkhead/deck with M12 bolts, tighten to 75 Nm.
4. Pull cables/pipes thru the frame and install the MCT Brattberg sealing.

RGSFBO

A

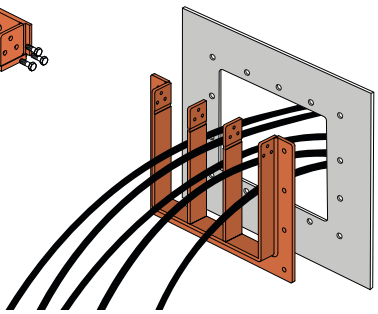


1



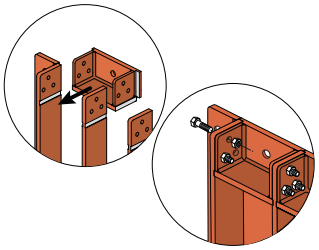
1. Unscrew the M8 bolts and dis mantle the removable frame parts, if necessary, use a plastic hammer.

2



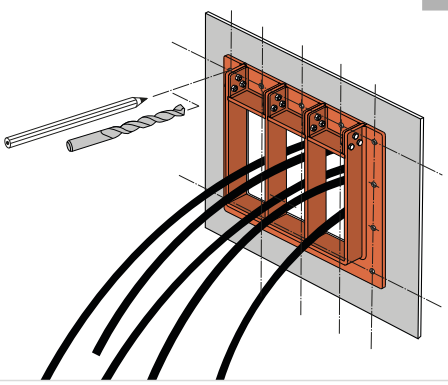
2. Protect cables from sealant and mechanical damage. Fit the frame around existing cables.

3



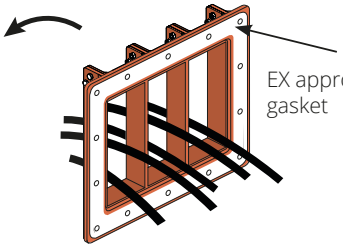
3. Apply sealant to marked areas and reinstall the removable parts to the frame.

4



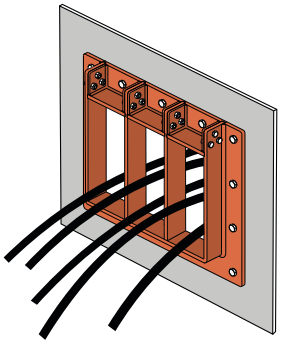
4. Position the frame to the bulkhead/deck, mark and drill the hole pattern to match the frame.

5



5. Apply Ex approved gasket.

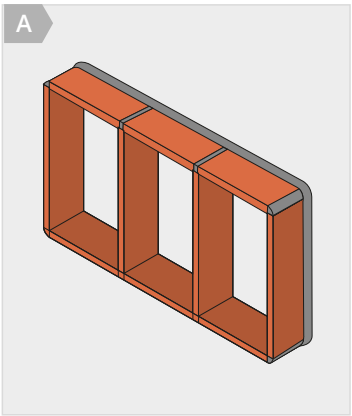
6



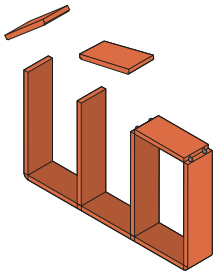
6. Install the frame to the bulkhead/deck with M12 bolts, tighten to 75 Nm.

RGSO

A

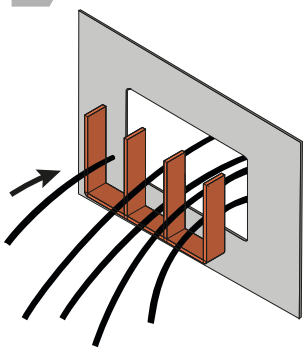


1



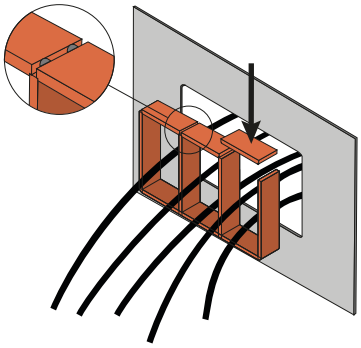
1. Grind off tack welds and dismantle frame ends.

2



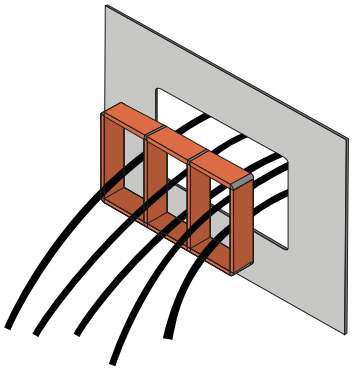
2. Fit the frame around existing cables.Protect the cables from heat and weld spatter.

3



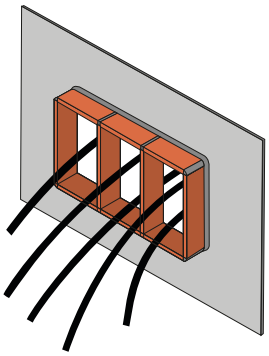
3. Put the frame ends back onto the frame and tack weld them as they were at delivery, make sure that the cables are carefully protected. Check inside dimensions in the squares, they must be within tolrances. See dimension table.

4



4. Weld the frames corners and T-joints according to MCT Brattberg drawing No. 1111374. Check inside dimensions again.

5

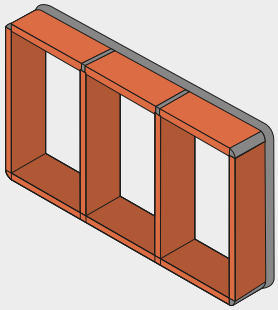


5. Put the frame in right position to the bulkhead and weld it according to MCT Brattberg instruction LB 253. Check inside dimensions one more time.

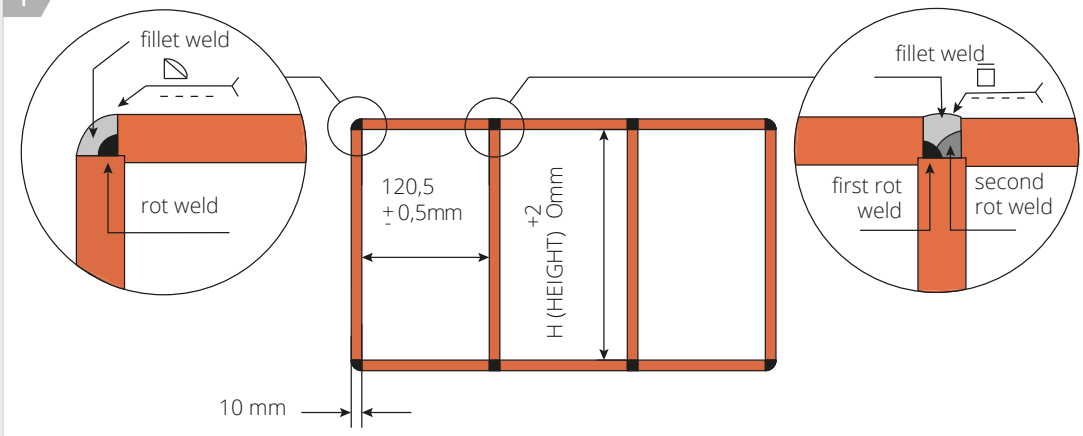
Dimension table RGSO frames	
RGSO Frame Width	120,0 - 121,0
RGSO-2 Height	100,5 - 101,5
RGSO-4 Height	159,0 - 160,0
RGSO-6 Height	217,5 - 218,5
RGSO-8 Height	276,0 - 277,0

Welding Instruction RGSO

B

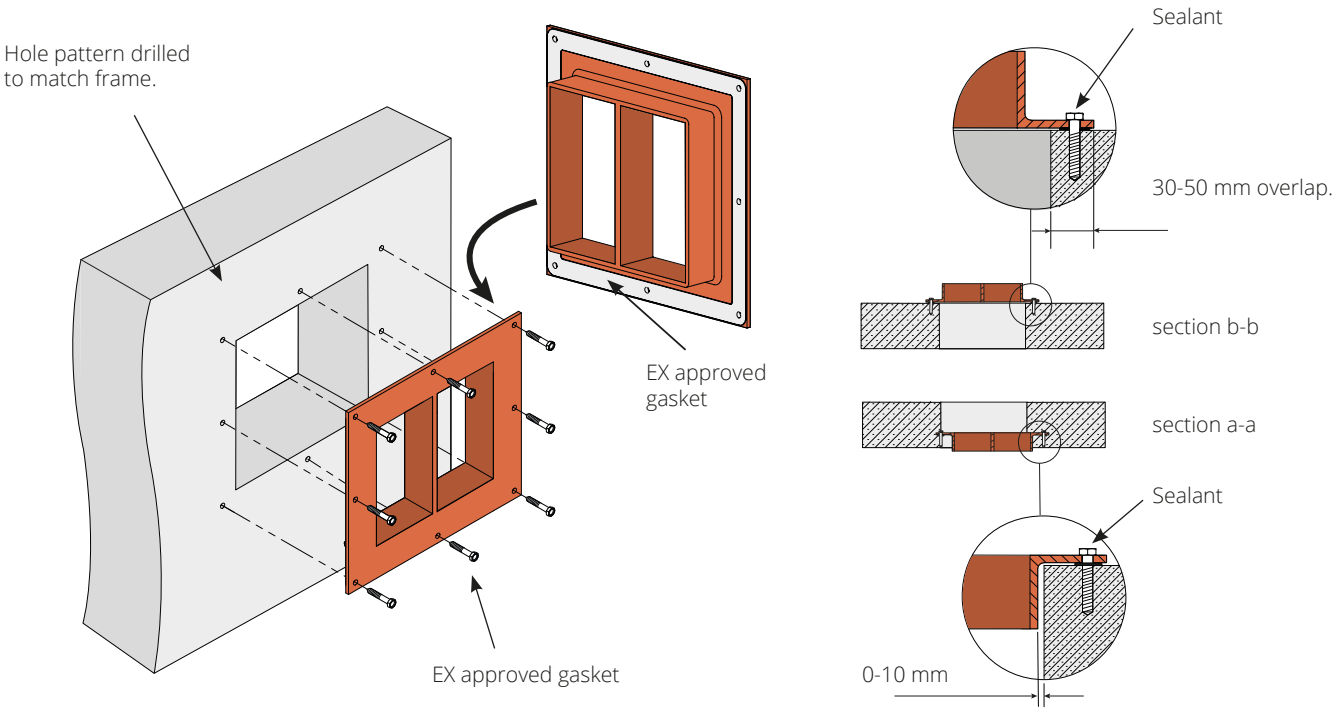


1



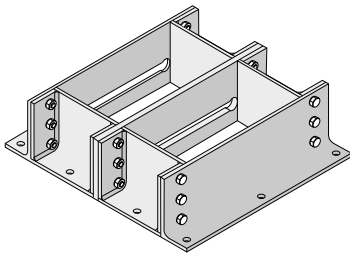
RGB, RGG, RGGO, RGGOK

6



RGGOK

A

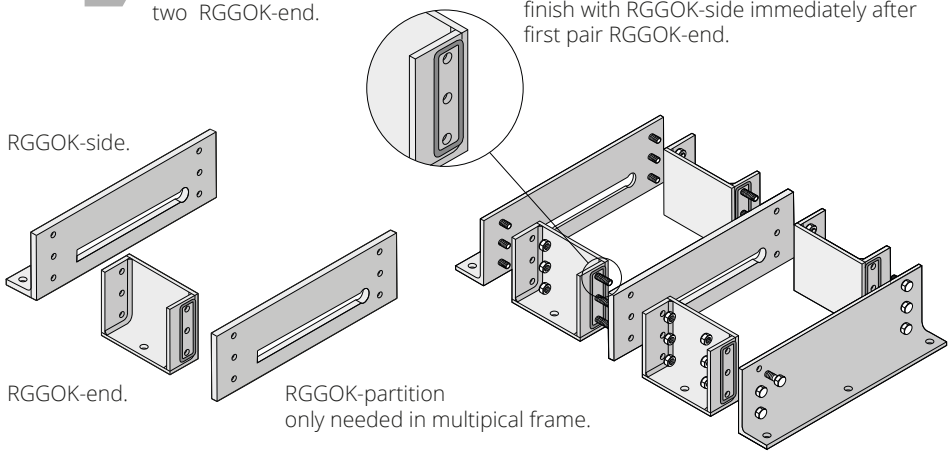


Finished assembled RGGOK
in example rggok-6x2.

1 Sealant around screw holes.

2 Screw the rggok-side to the two RGGOK-end.

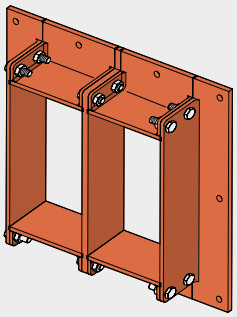
3 Screw on RGGOK-partition and two rggok-end until wanted number of frames is achived, finish with a RGGOK-side. if frame x1 is acquired, finish with RGGOK-side immediately after first pair RGGOK-end.



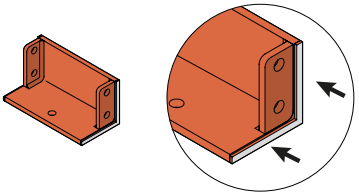
Follow these 3 steps to assemble RGGOK.

RGG-O

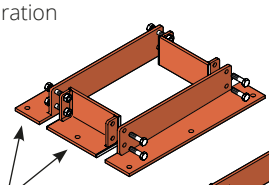
A



1 Cut the gasket with a sharp knife and attach the gasket on both sides of all the rgg-end that is going to be used in the wanted configuration the same way as in picture below.

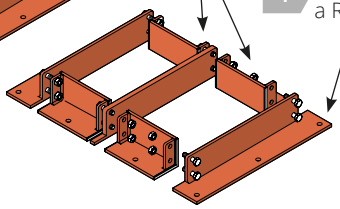


2 Screw the rgg-side to the two rgg-end.

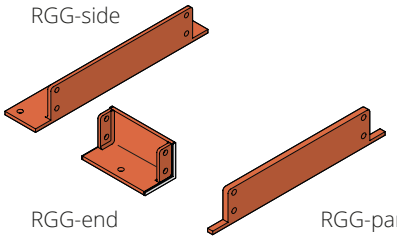


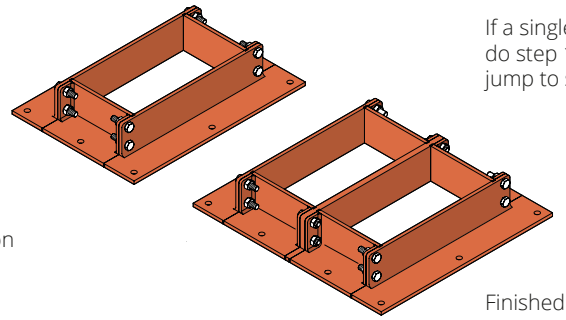
3 Screw on rgg-partition and two rgg-end until wanted number of frames is achieved.

4 Finish with a RGG-side.



5

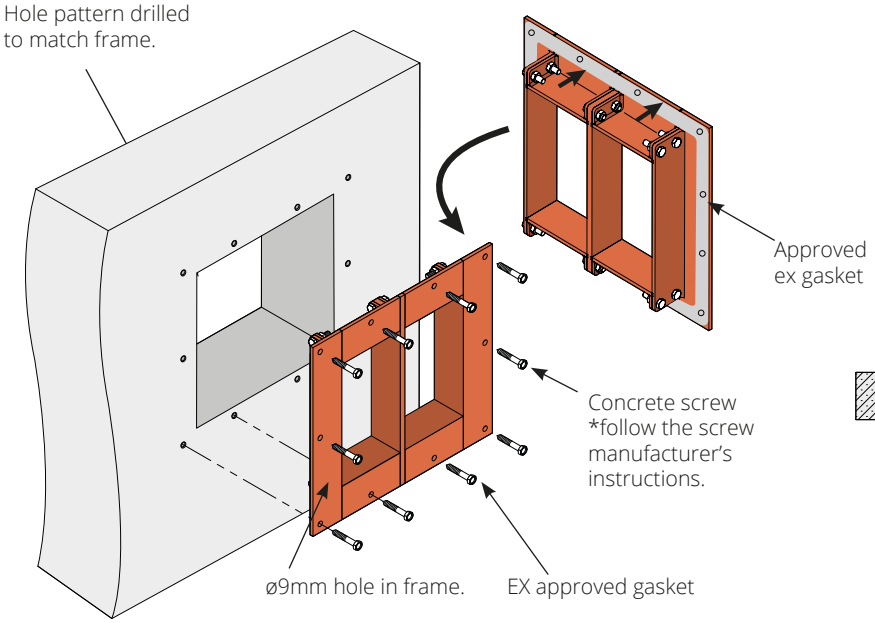


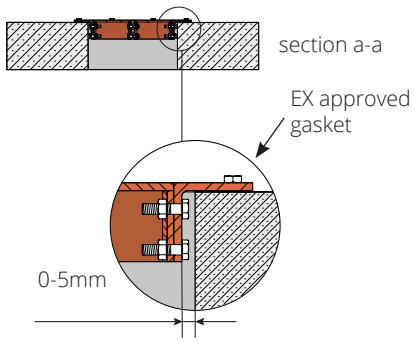


If a single frame is wanted do step 1: and 2: then jump to step 4:

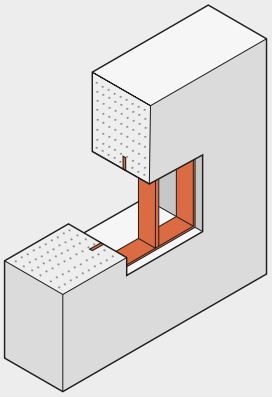
Finished assembled RGG open in example x1 and x2 frames.

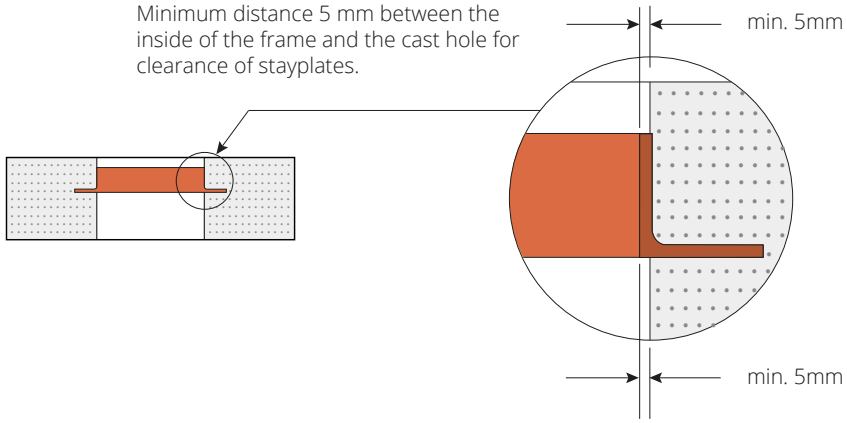
6

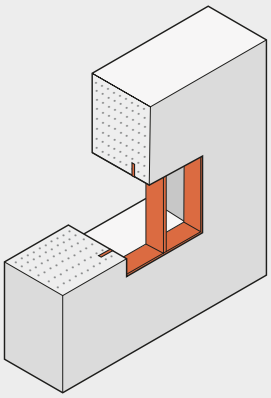


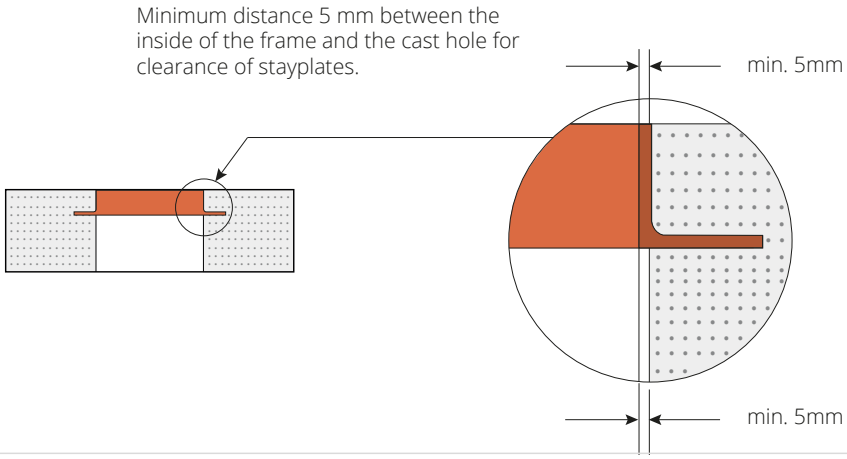


Casted/embedded frames









Polystyrene casting form