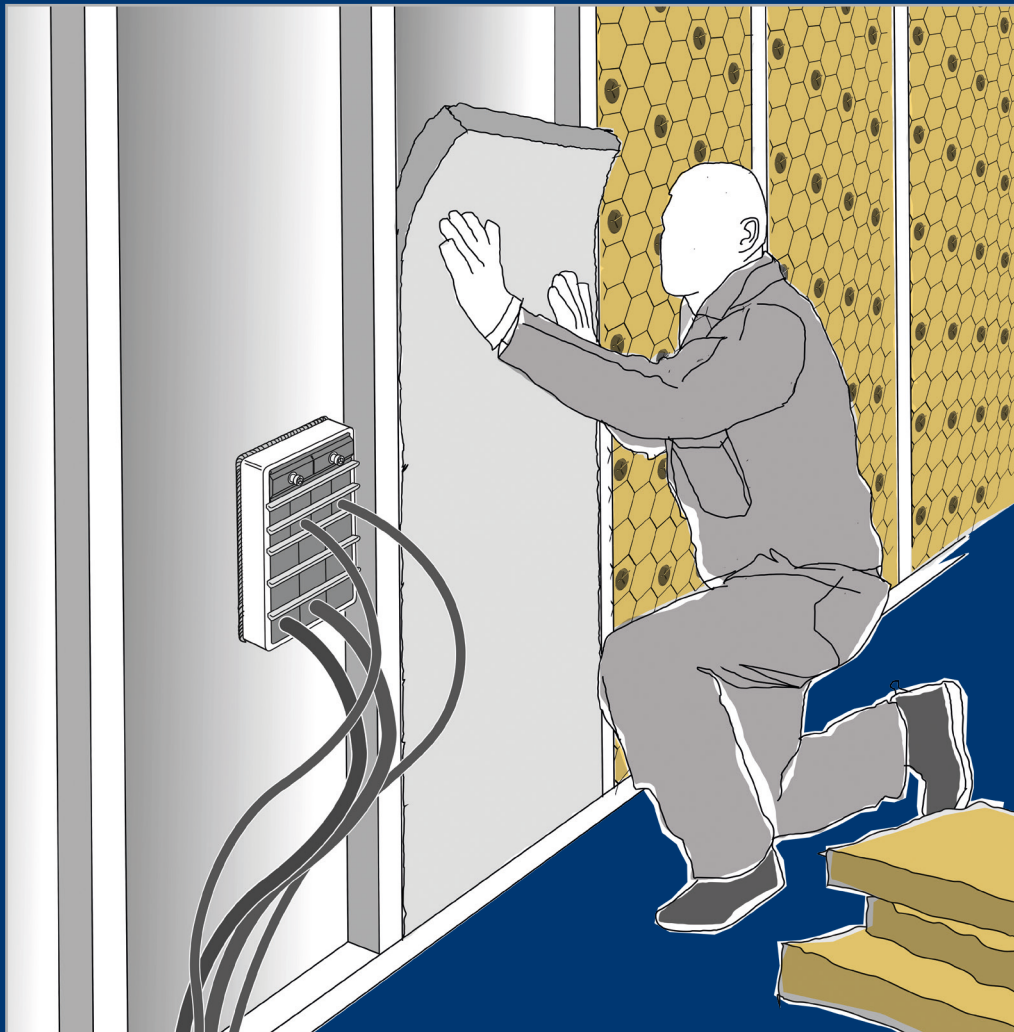


Description and application guidelines

MCT Brattberg insulation guidelines for marine and offshore applications



REV202605270J

Abstract

These guidelines are intended to support insulation personnel when insulating MCT Brattberg cable and pipe penetration sealing systems in accordance with the applicable MCT Brattberg type approvals. Please note that some MCT Brattberg type approvals may not require any additional insulation.

For product details and supplementary information not included in this guideline, visit the MCT Brattberg website or contact your nearest MCT Brattberg representative.

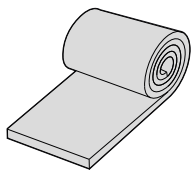
Requirements before insulation work

Before starting the insulation work, verify the applicable MCT Brattberg type approval to confirm the required insulation material, density, thickness and length. These requirements depend on the structure type, such as steel or aluminium, and the relevant fire classification or fire exposure requirement, such as A-class, H-class, jet fire or equivalent.
to type of structure (steel/aluminum) and fire requirement (A-class, H-class, jet fire, etc).

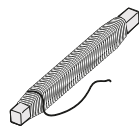
1 Components and tools

1.1 Components

Type may vary depending on application.



Approved type of insulation sheet or boards



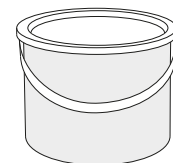
Steel safety wire



Insulation washers



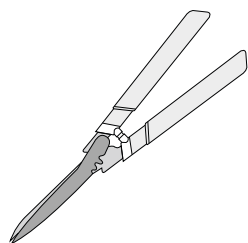
Insulation pins



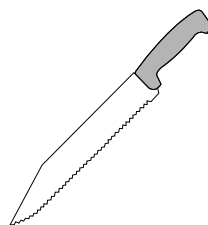
Approved PFP coating (example: Chartek)

1.2 Tools

Type may vary depending on application.



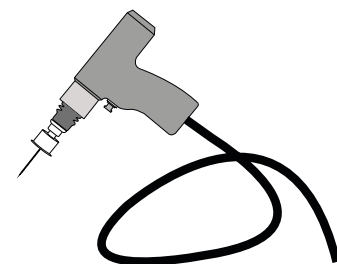
Hedge clippers



Insulation knife



Pliers



Welding machine for insulation pins

Glossary

Structure insulation – Fire-rated insulation installed on the adjacent bulkhead or deck structure when needed to achieve the required fire classification for the installation.

Transit insulation – Supplementary insulation applied to the cable or pipe penetration, or directly around it, in addition to any insulation fitted to the bulkhead or deck. The insulation layout must be in accordance with the applicable MCT Brattberg type approval for the specific application.

PFP coating – Passive fire protection coating applied to help enhance or preserve the required fire resistance performance.

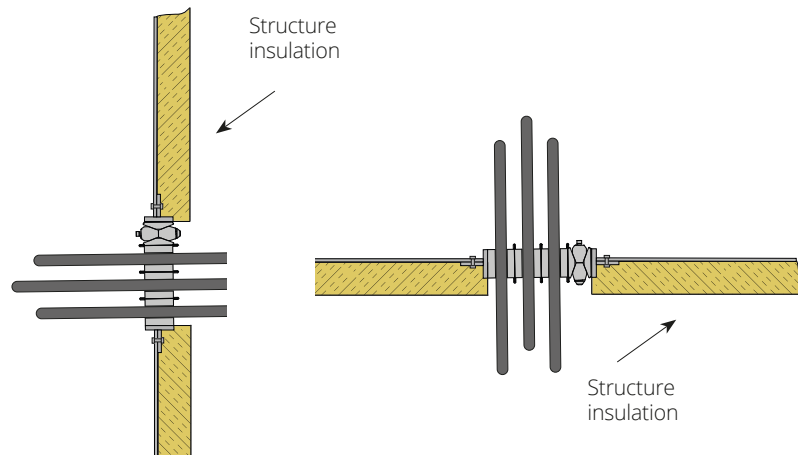
BTB systems – Back-to-back installation configuration consisting of two independent sealing barriers.

Insulation Guide - Contents

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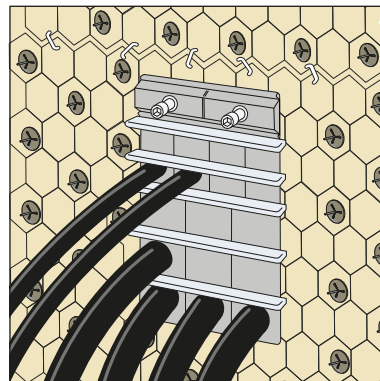
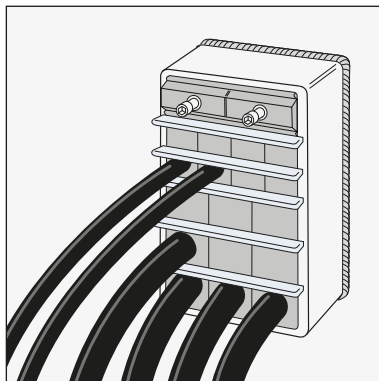
2 Rectangular systems

2.1 Without transit insulation



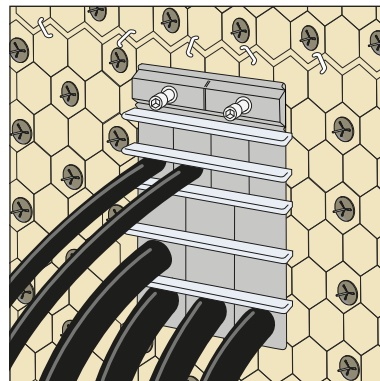
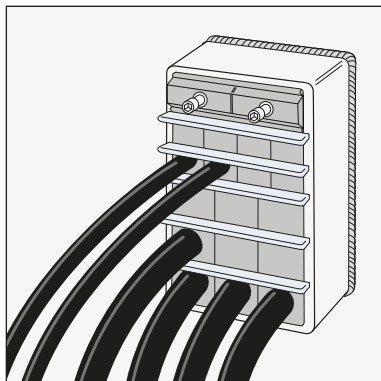
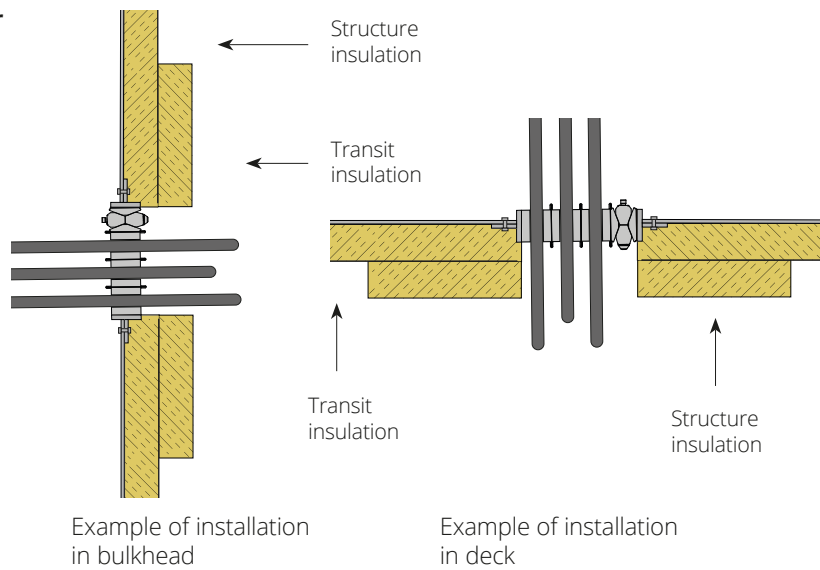
Example of installation
in bulkhead

Example of installation
in deck

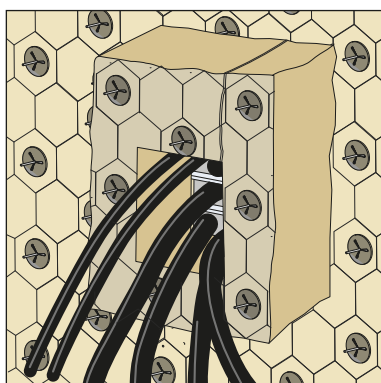


Install approved structure insulation around the transit. For further information, refer to the insulation manufacturer's installation instructions.

2.2 With transit insulation - Collar

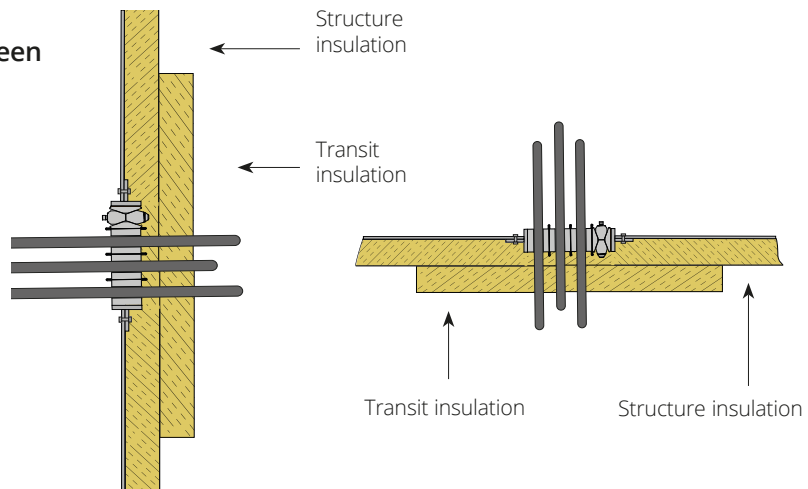


Install approved structure insulation around the transit. For further information, refer to the insulation manufacturer's installation instructions.
Note: Use extended insulation pins around the transit where required.



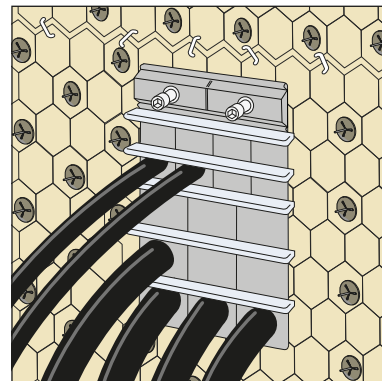
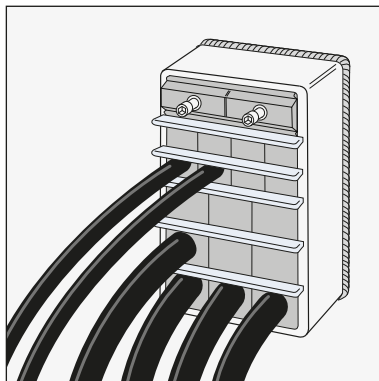
Adapt the transit insulation as required and fit it around the transit. Secure the insulation collar using extended insulation pins fixed to the surrounding structure.

2.3 With transit insulation
- Collar including insulation between
cables/pipes

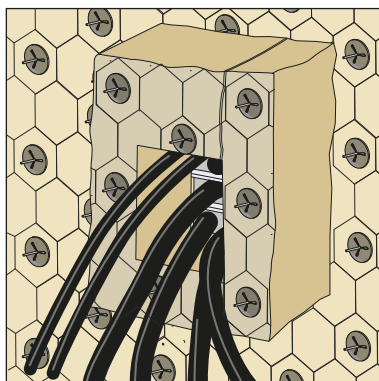


Example of installation in bulkhead

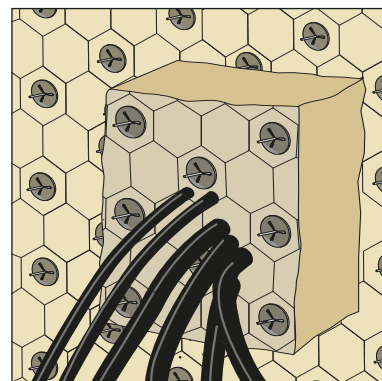
Example of installation in deck



Install approved structure insulation around the transit. For further guidance, refer to the insulation manufacturer's installation instructions.
 Note: Longer insulation pins shall also be fitted around the transit.



Cut and fit the transit insulation as required, then install it around the transit. Secure the collar using longer insulation pins attached to the surrounding structure.

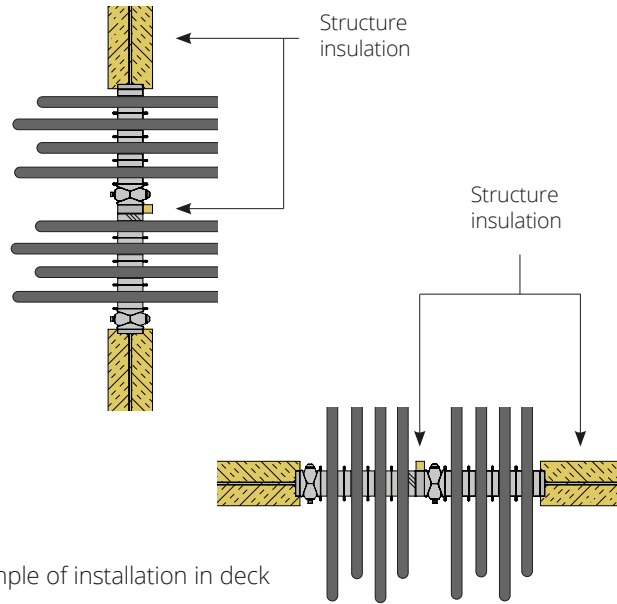


Insert sections of approved insulation between the cables or pipes to completely fill the cavity. Secure the insulation within the cavity using wire mesh and/or steel wire.

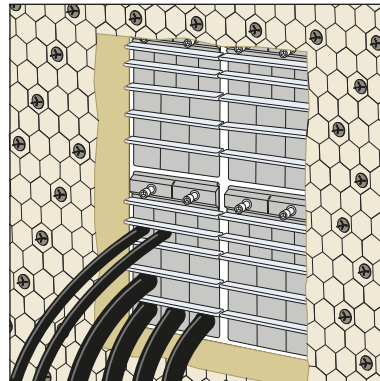
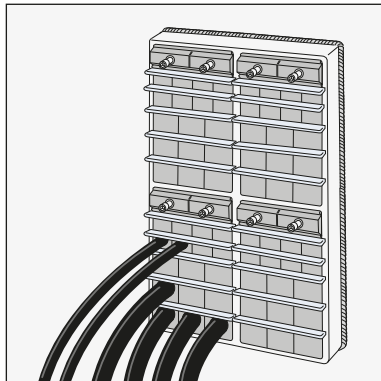
2.4 With transit insulation – Insulated frame partition walls

When insulation on frame partition walls in combination frames is required by MCT Brattberg’s type approvals

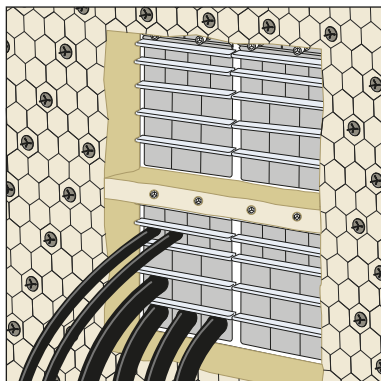
Example of installation in bulkhead



Example of installation in deck



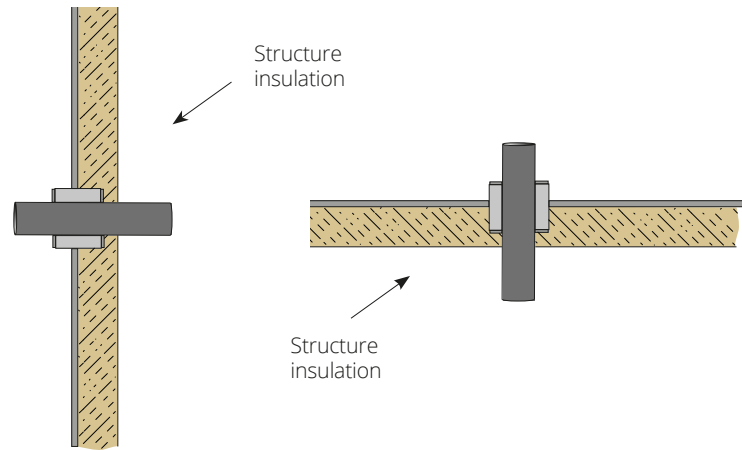
Apply approved structure insulation around the transit. For installation details, refer to the insulation manufacturer’s instructions for structure insulation.
 Note: Insulation pins shall also be fitted to the horizontal partition walls in the MCT Brattberg combination frame. Where the position of the stayplates is known, insulation pins may also be fitted to the vertical partition wall, provided they do not interfere with each other.



Fit pieces of approved insulation along the partition walls and secure them to the insulation pins using insulation washers. Where insulation pins are not available, fasten the insulation with steel wire.

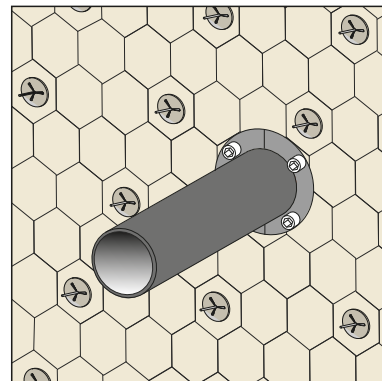
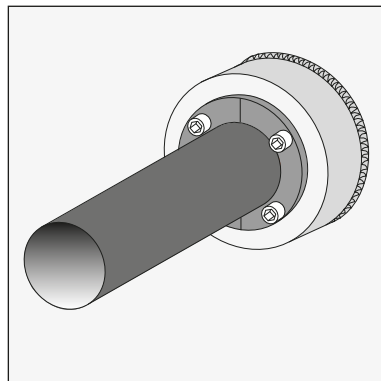
3 Round systems

3.1 Without transit insulation



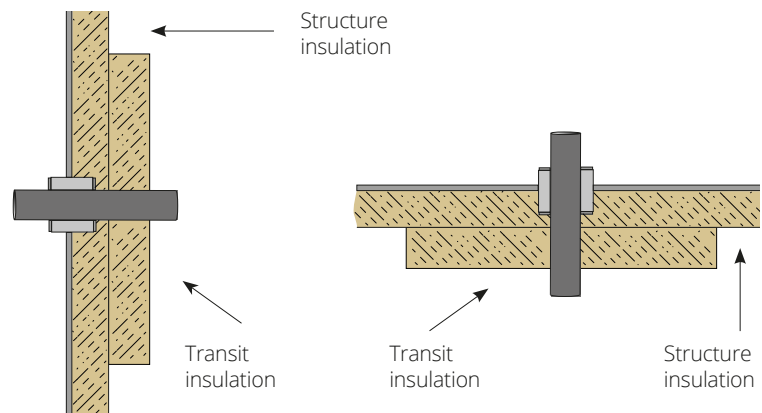
Example of installation in bulkhead

Example of installation in deck



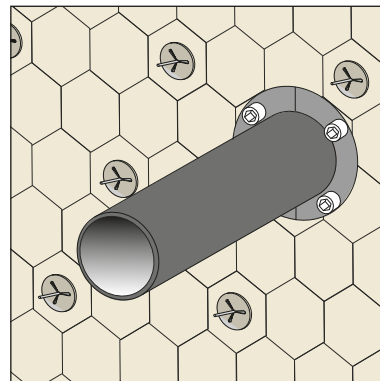
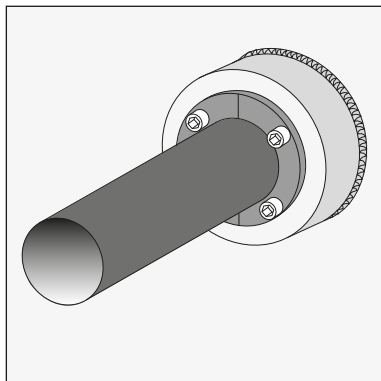
Apply approved structure insulation around the transit. For installation details, refer to the insulation manufacturer's instructions.

3.2 With transit insulation - Collar



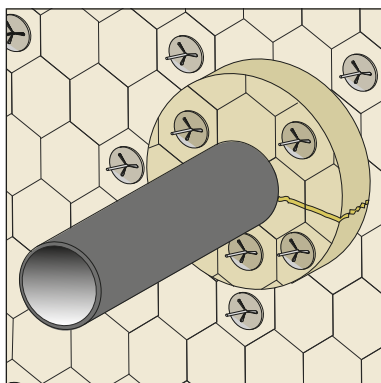
Example of installation in bulkhead

Example of installation in deck



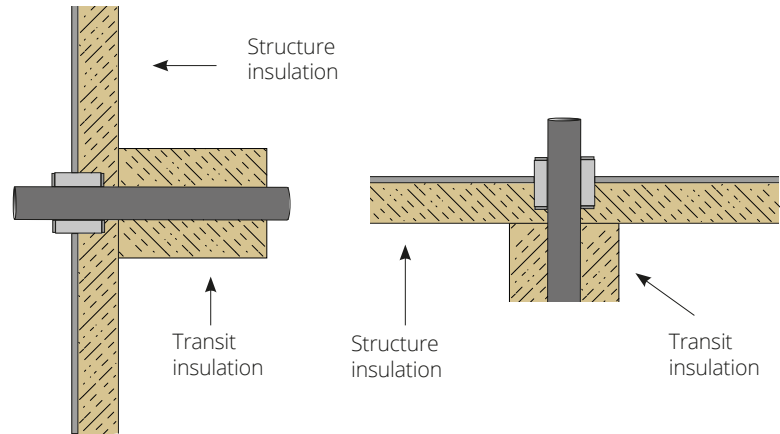
Apply approved structure insulation around the transit. For installation details, refer to the insulation manufacturer's instructions.

Note: Longer insulation pins shall also be fitted around the transit.



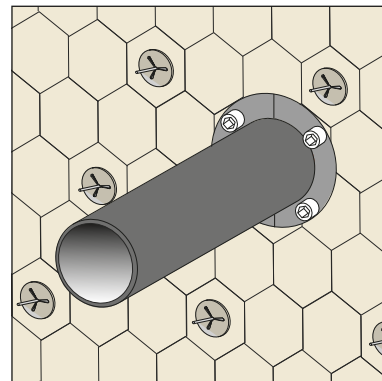
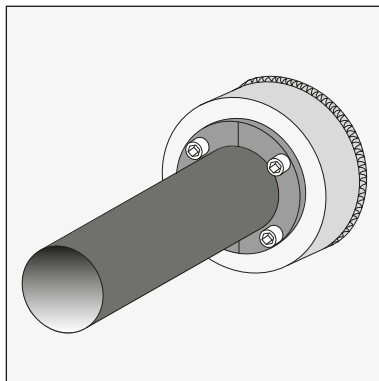
Adjust and fit the transit insulation around the transit as required. Secure the collar with longer insulation pins fixed to the surrounding structure.

3.3 With transit insulation - Wrap

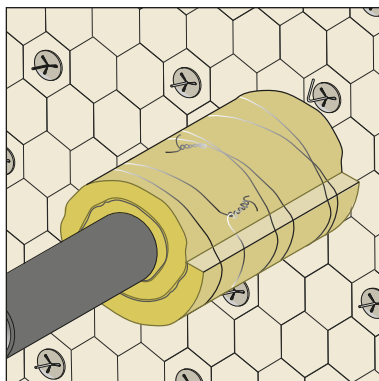


Example of installation in deck

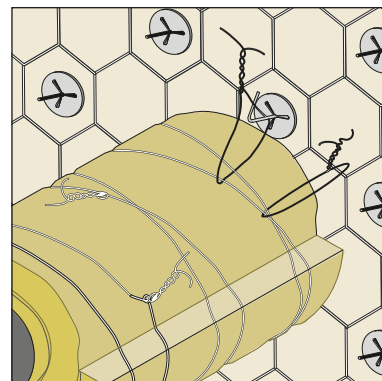
Example of installation in bulkhead



Install approved structure insulation around the transit. For further guidance, refer to the insulation manufacturer's installation instructions.

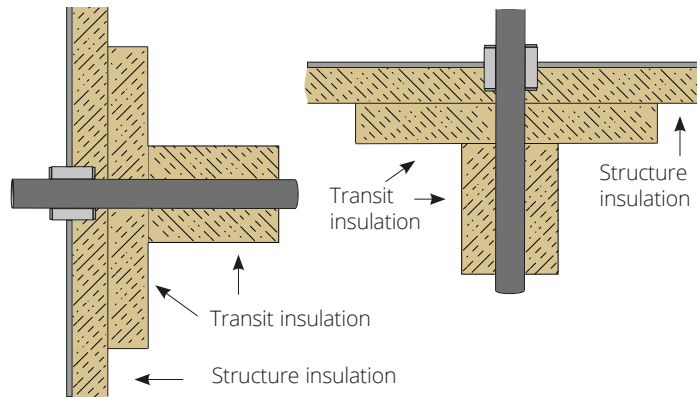


Fit the wrap around the transit.



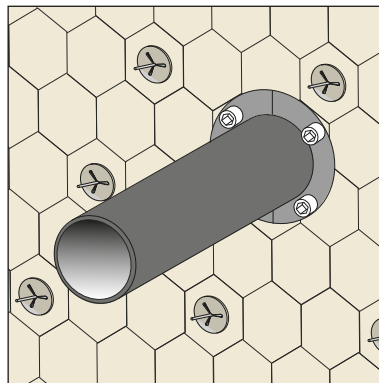
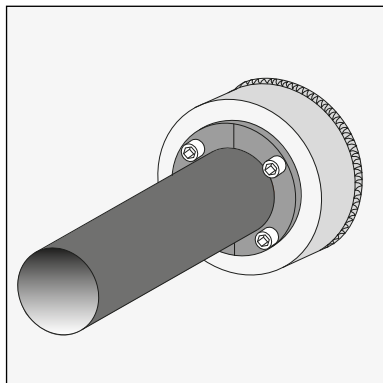
Fasten the wrap to the insulation pin.

3.4 With transit insulation – Collar and wrap

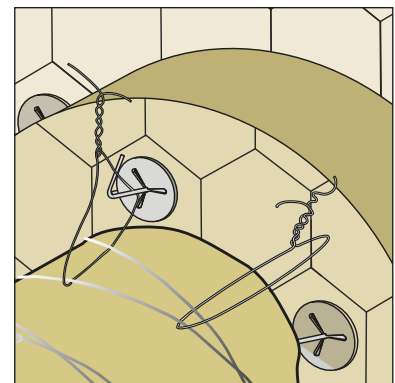
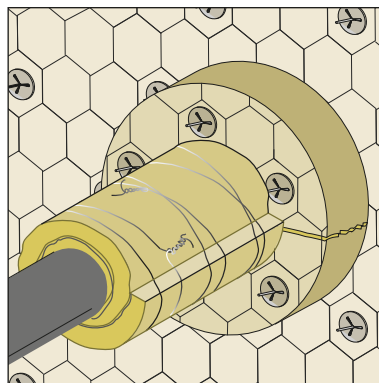
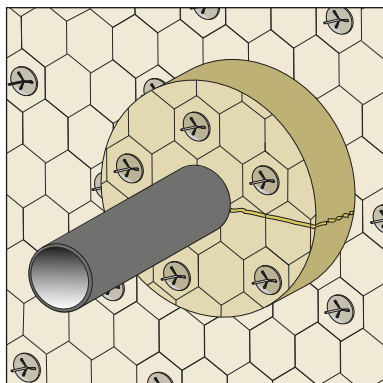


Example of installation in bulkhead

Example of installation in deck



Install approved structure insulation around the transit. For further guidance, refer to the insulation manufacturer's installation instructions.
Note: Longer insulation pins shall also be fitted around the transit.

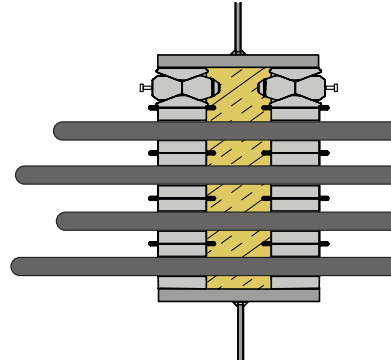


Adjust the collar as required and fit it around the transit. Secure the collar using longer insulation pins mounted to the surrounding structure.

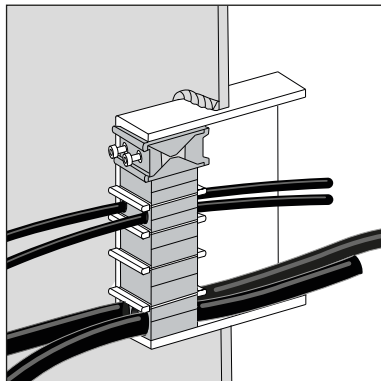
Adjust the wrap as needed and fit it around the transit. Secure the wrap to the structure using steel wire.

4 BTB systems

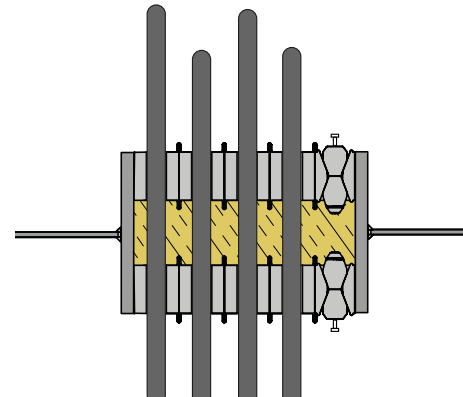
When insulation between the sealing barriers inside the frame or sleeve is required by MCT Brattberg type approvals.



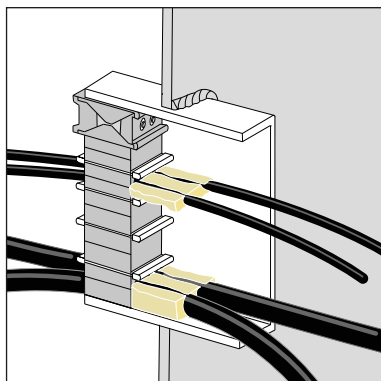
Example of installation in bulkhead



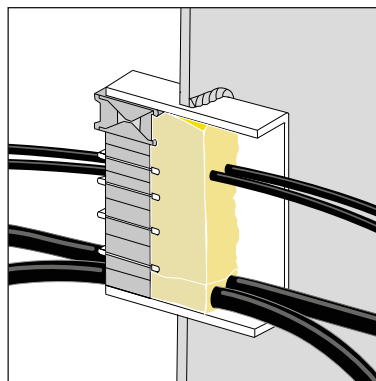
Fit the first sealing barrier.



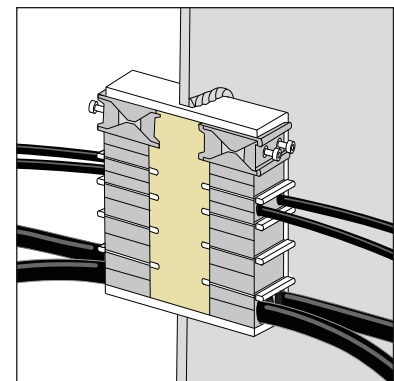
Example of installation in deck



Begin insulating the transit from the opposite side.



Insert pieces of approved insulation between the cables or pipes to fill the cavity completely.

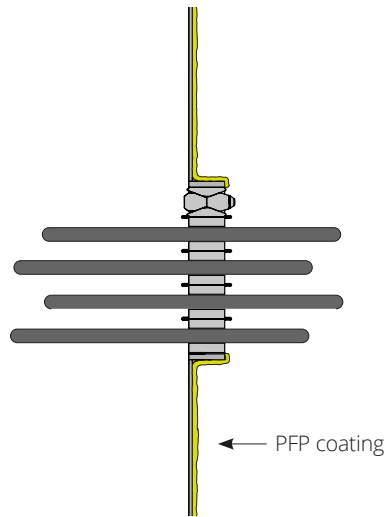


Fit the second barrier

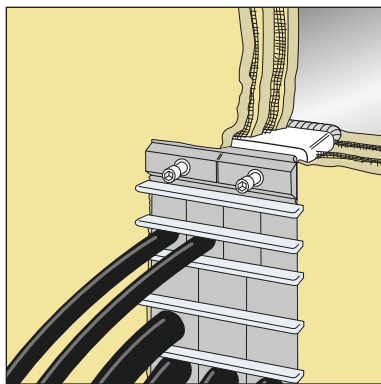
5 PFP coating

When PFP coating is required by MCT Brattberg type approvals, apply the approved PFP coating around the transit in accordance with the certificate drawing.

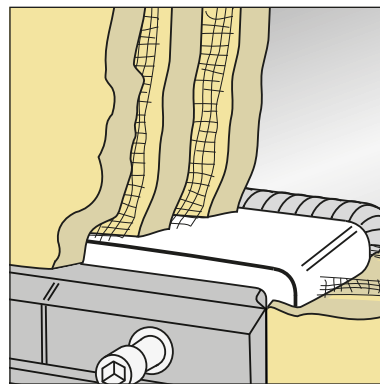
This work is normally carried out by an approved installer or trained personnel.



Example of installation of PFP



Overview of PFP coating



PFP coating

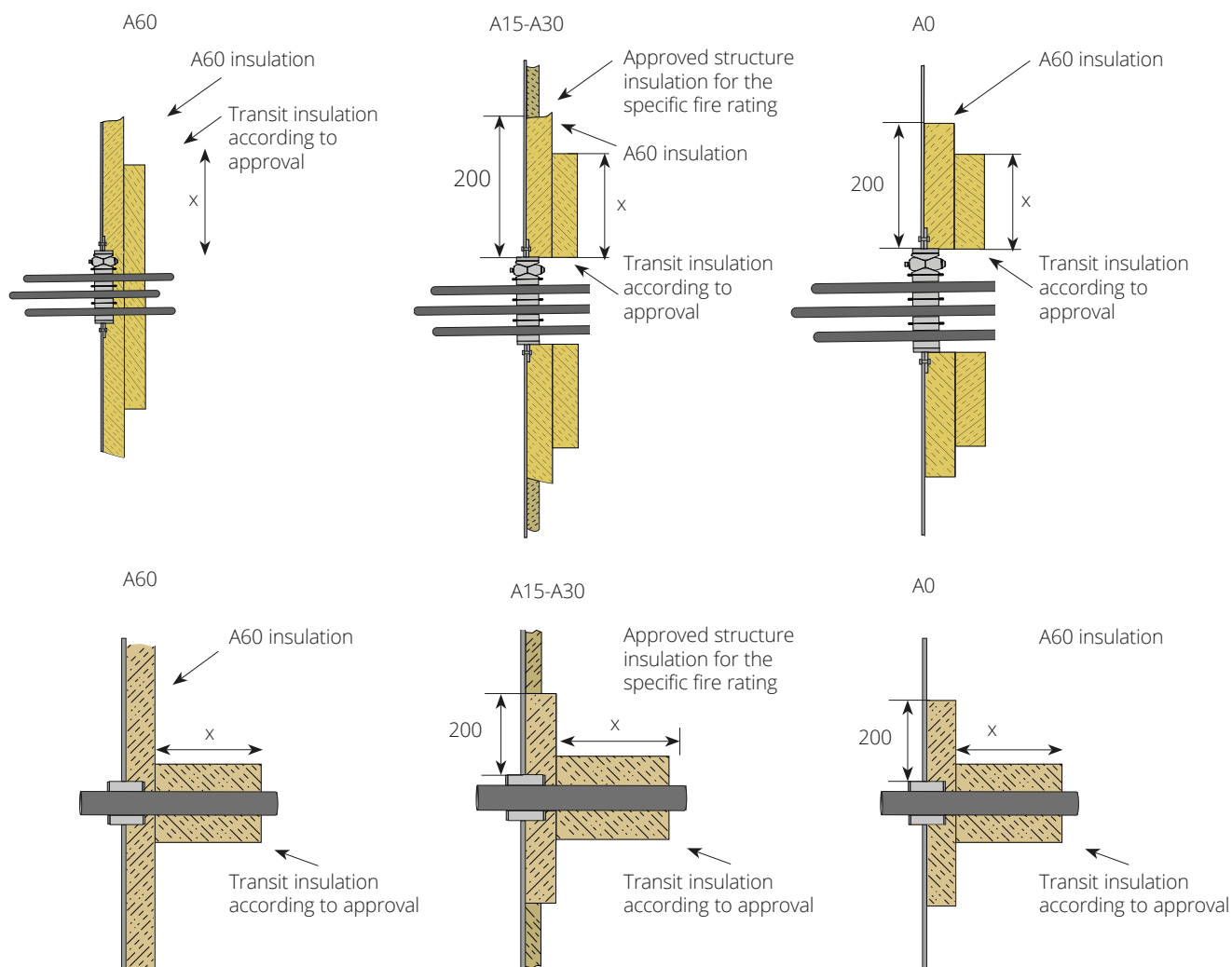
6 General interpretations

6.1 A60 approvals interpreted into A0-A30 applications

General accepted interpretation for applying A60 approvals to A0-A30 applications when no specific A0-A30 drawings are available:

Where a cable or pipe penetration is approved for use in A60 applications, it may also be used for A0, A15 and A30 applications. In these cases, any insulation on the penetration itself and 200 mm around it, including insulation required for the A60-approved arrangement, shall also be installed for A0, A15 and A30 applications.

Examples:

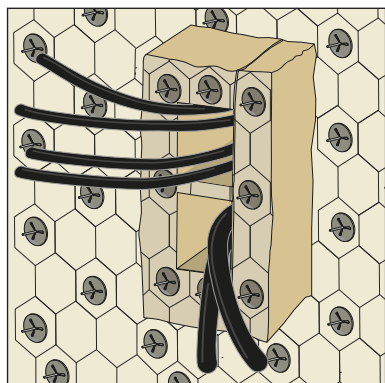


Must be evaluated and approved by class surveyor.

6.2 How to insulate when transits are placed close to each other

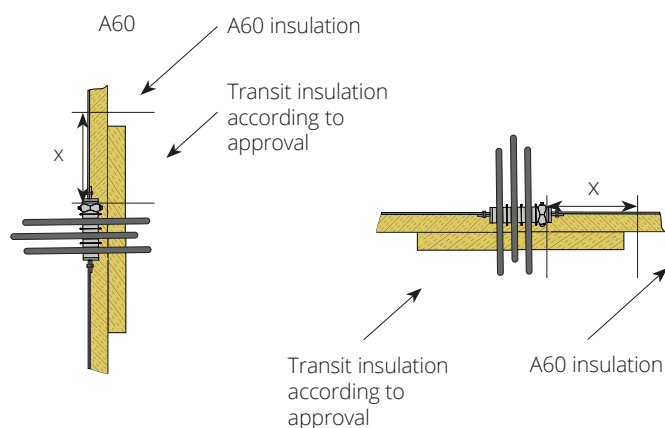
General accepted interpretation for applying insulation when transits are installed close together:

When transits are positioned close to each other, the insulation shall still be installed in accordance with the applicable MCT Brattberg type approvals. The required insulation distance shall be measured from the combined outer perimeter of the transits, including the area between the transits.

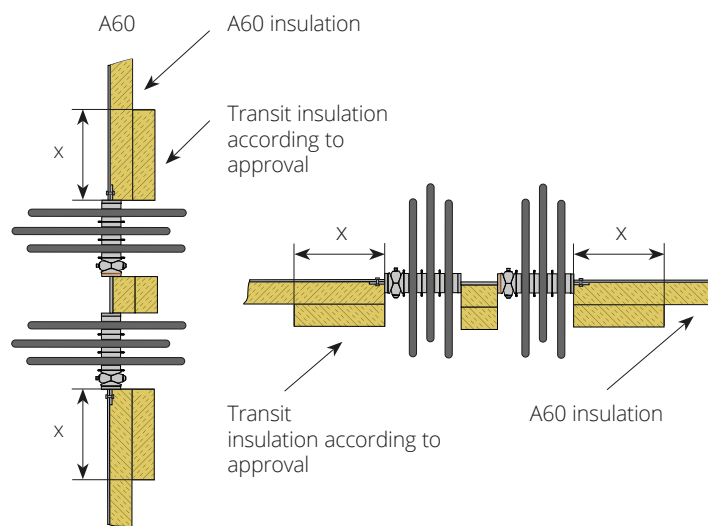


Must be evaluated and approved by class surveyor.

Examples:



Examples of two transits placed close to each other:



DISCLAIMER

The MCT Brattberg cable and pipe penetration sealing system is a modular sealing solution made up of several individual components. Each component forms part of the complete system and is required to achieve the intended performance.

The system may be certified for resistance against various hazards. Such certification, and the system's ability to provide the specified protection, depends on all installed components forming part of the approved MCT Brattberg system. Certification is therefore only valid when all components installed as part of the system are manufactured by MCT Brattberg or by an approved manufacturer licensed by MCT Brattberg.

MCT Brattberg provides no performance guarantee for the system unless:

- a) During storage, the system or any part of it is kept indoors, in its original packaging, at room temperature.
- b) Installation is carried out in accordance with the applicable MCT Brattberg installation instructions.

The product information provided by MCT Brattberg does not relieve the purchaser, installer or user from the responsibility to independently verify that the products are suitable for the intended process, installation and use.

MCT Brattberg gives no guarantee for the system, or any part of it, and accepts no liability for any loss or damage, whether direct, indirect, consequential, loss of profit or otherwise, arising from installations containing components not manufactured by MCT Brattberg or an approved manufacturer, or from use of the system in a manner or application other than that for which it was designed and intended.

To the extent permitted by applicable law, MCT Brattberg excludes all implied warranties, including warranties of merchantability and fitness for a particular purpose, as well as any other express or implied representations or warranties provided by statute or common law.

The user is responsible for determining the suitability of the MCT Brattberg system for the intended application and assumes all risks and liabilities connected with such use. Under no circumstances shall MCT Brattberg be liable for indirect, consequential, punitive, special, exemplary or incidental damages or losses.

MCT Brattberg products are supplied and sold in accordance with the applicable MCT Brattberg General Terms and Conditions of Sale.