

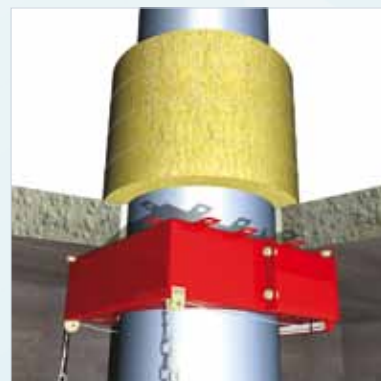
Basic Requirements for Creating a Penetration

Determine the required period of fire resistance of the element, and for loadbearing structures, ascertain the required load. The area to be sealed requires the same fire resistance as the complete floor or wall construction. In order to ensure the stability of the services is maintained under fire conditions, we recommend that all services must be adequately supported at maximum 250mm away from the wall or floor on both sides of the penetration. System fixings, impact protection and suspension elements must be steel. Monal alloys, aluminium etc are not permitted. Accessories such as guard-rails, steel angles, threaded rods. Suspension elements etc. must only be fixed to adjacent solid substrates such as concrete or masonry.



General Information on Intumex® RS50

- ⇒ Intumex® RS50 is suitable for surface-mounted conditions in solid walls and floors combined with the Intumex® V mortar system.
- ⇒ The fixing should consist of minimum M8 threaded rods (not included within the packaging).
- ⇒ Use the enclosed template for marking the holes prior to drilling.

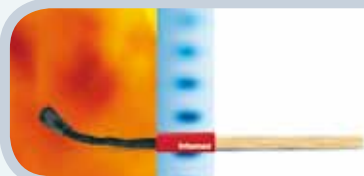


Area of Application

- ⇒ Wall (≥ 150 mm): the collars must be installed as pairs (one each side of the wall) as a surface mounted element to provide EI90 performance.
- ⇒ Floor (≥ 150 mm): A single surface mounted collar is required fixed to the underside of the floor to provide EI120 performance.
- ⇒ Suitable for PP pipes with diameters from 355 mm to 500 mm with pipe wall thicknesses of 6 to 8 mm.

Application Conditions

- ⇒ No known limits.



Installation: wall condition; collar pair Intumex® RS50

- ⇒ Clean opening and dampen with water.
 - ⇒ Fill any gap between the pipe and wall substrate using the Intumex® V mortar system.
 - ⇒ Apply the template to the wall and mark the position of the holes.
 - ⇒ Drill the holes of a size to fit the diameter of the fixings.
 - ⇒ Cut the threaded rods ($\geq M8$) to length (wall thickness plus approximately 60 mm) and pass through the wall and leave some 30 mm projecting from either face.
 - ⇒ Place the upper half-shell (fabric at the top) onto the pipe, push the threaded rods through the fixing flanges and the drilled holes.
 - ⇒ Place the second upper half-shell (fabric at the top) at the opposite side of the wall onto the threaded rods and bolt the two halves together using washers and nuts.
 - ⇒ Using the connecting straps, loosely fix the lower half-shell to one of the upper half-shells.
 - ⇒ Push the threaded rods through the flanges of the lower half shell passing through the wall.
 - ⇒ Place the lower half-shell on the opposite side of the wall onto the threaded rods and bolt with washers and nuts.
 - ⇒ Tighten all nuts and ensure the collars are firmly affixed to the wall.
 - ⇒ Ensure all the connecting straps between the two half shells are firmly fixed.
- Note :- For both floor and wall applications, care should be taken to ensure that the weights can be released unhindered by obstructions from other services etc.**
- ⇒ Apply the identification label.



Installation: floor condition; single collar Intumex® RS50

- ⇒ Clean opening and dampen with water.
- ⇒ Fill any gap between the pipe and wall substrate using the Intumex® V mortar system.
- ⇒ Apply the template to the wall and mark the position of the holes.
- ⇒ Drill the holes of a size to fit the diameter of the fixings.
- ⇒ Cut the threaded rods ($\geq M8$) to length (floor thickness plus approximately 40 mm), fix nuts and washers to one end and pass through from the upper surface of the floor.
- ⇒ Loosely fix the first half-shell onto the threaded rods.
- ⇒ Loosely fix the second half-shell onto the threaded rods.
- ⇒ Ensure the connecting straps between the two half shells are firmly fixed.
- ⇒ Tighten all nuts and ensure the collars are firmly affixed to the underside of the floor.

Note, the collar consists of two sections, before fixing the two halves you first need to remove the guide rollers for the steel wire. Do this by removing the axle screw.

- ⇒ Release the transportation lock of the weight system (this is a plastic binding tie.)
- ⇒ Once the two half shells have been installed, replace the steel wire within the guide tracks and replace the rollers.

Note :- For both floor and wall applications, care should be taken to ensure that the weights can be released unhindered by obstructions from other services etc.

- ⇒ The upper portion of pipe projecting through the floor requires additional insulation to meet the performance criteria. This is achieved by means of adding rock wool pipe sections around the upper portion of the pipe for a distance of 500 mm from the top surface of the floor.
- ⇒ The minimum rock wool specification is as follows :- length ≥ 500 mm, thickness 50 mm, melting point ≥ 1000 °C, density ≥ 40 kg/m³.
- ⇒ Wrap the mineral wool around the plastic pipe starting at floor level and fix in place with steel wire (annealed, $\varnothing \geq 1$ mm) at three points.
- ⇒ Apply the identification label.

For additional information on how and where to use this product please refer to our systems database www.intumex.info, or visit our website at <http://www.intumex.at>



Fastening technique for the installation of Intumex® RS50

In addition to the standard fastening method with threaded rods, described in our installation guideline, other fastening techniques are also possible. However, whether these can be applied or not depends on the construction materials used for the solid wall or ceiling structure on site. In particular, you must ensure that the fastening materials to be used have been fire protection approved and that the approval is valid for the relevant structural components.

The most important conditions to be met by the solid wall and ceiling structures and the suitable fastening materials for these structures are listed below:

Concrete walls and ceilings

The concrete grade must fulfil the following requirements: cube strength $\geq 25 \text{ N/mm}^2$ and gross density $\geq 1800 \text{ kg/m}^3$. The wall must be at least 100 mm and the ceiling 150 mm thick.

As an alternative to threaded rods, it is possible in this case to fasten the fire stopping collar with composite anchors, injection anchors, stick-through anchors or similar provided that their permissible load is $\geq 4 \text{ KN}$ in the used concrete grade. This corresponds to a loading capacity of at least 400 kg/dowel. The depth of the borehole must be at least 80 mm. Expansion plugs can only be used after a curing time of more than 7 days.

Masonry brick, concrete block or lime sand brick walls

These wall structures are made with different gross densities and structural component thicknesses. If the pull-out strength required to fasten the Intumex® RS50 fire stopping collars, i.e. min. 400 kg/dowel, is not reached or if no information is available for the structure, the fire pipe collars must be fastened with threaded rods (see installation guideline).

As an alternative to threaded rods, it is possible in this case to fasten the fire stopping collar with composite anchors, injection anchors, stick-through anchors or similar provided that their permissible load is $\geq 4 \text{ KN}$ in the used concrete grade. This corresponds to a loading capacity of at least 400 kg/dowel. The minimum insertion depths of the fastening elements must be chosen in accordance with the manufacturer's statements, always ensuring that the required pull-out resistance is also achieved after the supporting structure has been subjected to fire.



Cellular concrete and lightweight concrete structures

Aerated concrete structures ($\geq 650 \text{ kg/m}^3$) and lightweight concrete structures ($\leq 1800 \text{ kg/m}^3$) are not strong enough. Therefore, only threaded rods can be used to install the Intumex® RS50 fire pipe collars (see installation guideline).

Intumex® V mortar penetration seal or poured concrete

The threaded rods ($\geq \text{M8}$) can be embedded in concrete or mortar like concrete anchors. For this purpose, proceed as follows: apply the formwork, mark the boreholes on it with a template and make the drillings. Bend the threaded rods 90 degrees at one end (approximately 50 mm) and introduce them in the borehole in such a way that the bent part reaches at least 70mm into the penetration seal and that the lower end protrudes approximately 20 mm from the lower edge of the penetration seal. Fasten with a nut on the formwork. Then close the penetration seal opening with Intumex® V or bedding mortar. Once the formwork has been removed, the Intumex® RS50 fire pipe collar can be fastened with the threaded rods (M8 and M12 washers). The required strength of the structure in case of a fire will be reached after approximately 4 weeks' drying.

The Intumex® RS50 fire pipe collar is not suitable for installation in lightweight partitions and soft seal systems.

For special components such as hollow section ceilings, suspended brick ceilings or similar structures, threaded rods can be used for fastening. If this is not possible for structural reasons, please do not hesitate to get in touch with us for advice.