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A

Acoustics

Are any of your firestop products acoustically rated?

We have test reports for all our firestop products. Due to the many variables involved in a complete acoustic solution and to discuss your requirements contact our Technical Advisory Service for assistance and advice.

More information about the sound insulation properties of Hilti fireseals can be found in the Firestop Binder [here](#) and in the specific product pages [here](#)

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Air Sealing

I need to comply with these new standards to ensure that my building is air tight-can your firestop products do this?

Hilti Firestop products have been tested for air tightness against 50 Pa and 250 Pa pressures and so can be used to seal buildings to meet these legislative air tightness requirements. See also [Gas Tightness](#)

For advice on the most suitable products for the different applications contact our Technical Advisory Service.

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Annulus (see also [Thickness](#))

What is the smallest annulus for your mastic around a service?

CP 601S - 10 mm

CP 606 – 6 mm

CP 611A - 20 mm for cables

- 25 mm for plastic pipes

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ABS Plastic

What should I use on ABS pipe?

As it is normally used as waste pipe sizes (32 mm upwards), it is recommended that CP 643 N pipe collars be used. On the smaller sizes (<50 mm) it is OK to have a gap between the collar and the pipe (see [Plastic Pipes](#) and [Waste Pipes](#)) as it has been tested for this and works. For cold smoke sealing, seal the gap between the pipe and wall with CP 611A mastic or infill the gap between the pipe and collar with the same or CP 606.

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Approvals

My insurance company require that I use approved firestop products-to make good our fire compartmentation, does Hilti have any?

In general Hilti Firestop is approved for use to meet the requirements of the building regulations because it has been tested to the relevant standards (BS 476 and EN 1366-3) and in installations that are representative of what is found on site.

Hilti also have 3rd party approvals by a wide variety of international bodies, such as FM, UL, Certifire and iBMB. Essentially this means that insurer's requirements are met by the use of such approved products.

Products approved include:

FM- CP 601S, CP 606, CP 642, CP 643, CP 636, CP 671, CP 657, CP 620, and CP 680

Certifire- CP 637 and CP 638

LPCB See RedBookLive [Here](#) for current approvals.

Hilti have also had many of our firestop products ETA approved, more information about ETA approvals can be found [here](#).

For details contact Hilti Technical Advisory Service for assistance and advice concerning our product approvals.

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Backing material

Why should I use a backing material with mastic and sealants?

All mastic and sealants firestop seals require backfilling. This can be either mineral wool, PE rod or CF 125 Fire rated expanding Foam. Backfill is used to:

1. Ensure the depth of firestop sealant/mastic is controlled
2. To ensure that sealants adhere to opening sides when tooled
3. To provide in some instances extra insulation against heat penetration

Which one to use with which mastic depends on the application and the required fire rating
Consult Hilti for details.

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Backfill

When should I backfill a seal?

To restore the structural integrity of a compartment wall/floor and or to provide a [smoke seal](#) where there is a clearance between the pipe and the collar.

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What can I backfill a pipe wrap with?

CP 660 Expanding sealant or CP 636, 637 or 638 Fire Resistant Mortar has been tested with CP 648 Pipe Wrap. CP 660 has the advantage of speed and no need to use traditional formwork. Hilti Wraps and Hilti materials for backfill have been tested as a system in accordance with regulatory requirements

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How do I backfill service holes in the floor?

If the opening in the floor is big enough for someone to stand on, our strong advice is to consider it a load bearing floor. The product to use is CP 638 High Strength Compound. It does not require reinforcement or starter bars as long as a span/depth ratio of between 12:1 and 16:1 is maintained (minimum thickness 100 mm) and it can bear upon two parallel structural components (e.g. concrete slab edges). If the services are rigid (steel pipes and cable trays) and rigidly fixed and spaced apart so there is sufficient clear span across the opening, CP 638 needs no reinforcement. If there are HVAC ducts, and/or the opening is larger than 2 m, contact the Hilti Technical Advisory Service for advice. See also [Loadbearing Floors](#)

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Batts

There are fire batts/coated boards used as firestop on my project and they have been sealed on one side only. Is that correct?

Or

The fire batt/coated board seals have been pointed with mastic on each face have they been correctly installed?

Generically speaking coated board systems (e.g. Hilti CP 670) are tested with the joints filled with mastic (CP 606). The mastic acts as both a filler and adhesive to ensure no gaps or resulting hot spots appear in the seal in the event of a fire. If air has been trapped in the joints in the case of face pointed seals its rapid expansion could cause the seal to burst and invite rapid heat penetration and premature failure of the seal. The sections of coated board or batt should have their edges buttered with the appropriate mastic as was originally tested and approved.

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Blast Resistance

Do Hilti offer blast resistant fire seals?

See [Explosions](#)

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Burning

I've just put a light to your firestop and it burns. I thought it was supposed to be firestop?

There is a difference between fire rated and fireproof. Fire rated means it will resist the passage of fire for a certain period of time (determined by test). Fireproof means it does not burn. Firestop materials have to have other properties (elasticity, workability, durability, etc.) and as such the final product is a best compromise. You will find that although some of the products burn in an uncured state, they do not sustain burning i.e. the fire goes out. Unfortunately this cannot be said for all firestop products on the market.

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Cables

I've got a cable going through a partition wall, what should I use?

CP 611A should be gunned around in a bead of minimum width of 20 mm and 25 mm deep wherever the cable goes into the wall, If this cannot be achieved, that is if the cable has no clearance either make the hole bigger or fit a pipe collar (e.g. CP 643N or CP 644) around the cable/s. If the hole has been cored (>50 mm dia.) the quickest cleanest way to do it is with our CP 658 preformed plugs, particularly if the premises are already occupied, for they are mess free. If the opening is irregular, and or is in a partition wall where the opening is not framed and lined then use CP 660 the only product in the UK tested for such an application.

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Cables no clearance

I've got cables going through a wall (or floor) and there is no clearance around them to put in any firestop-what do I do?

Determine the outside diameter of the cable bunch and fit a CP 643N pipe collar around them, securing it to the base material as recommended in the technical information. If it is a wall then fit a collar to each face of the wall. If it is a floor, then fit one CP 643N collar to the underside (soffit). Fill any gaps between the cables and collar with CP 611A mastic.

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Cable Insulation

Does your firestop damage the insulation on cables?

To the best of our knowledge, no damage occurs to sheathing of cables as the products used for sealing cables are either water based (CP 611A, CP 670 Coating/Filler), contain no solvents (all), are dry fit (CP 656, 657,651) or are alkaline when wet and inert when cured (CP 636). However for special purpose cables please confirm this with the cable manufacturer.

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Reinstallation of cables

Can I install more cables through a seal at a later date?

For ease of installation it is best to use our CP 653 Speedsleeves as they permit the installation and removal of cables very easily through the opening and closing of the sleeve. Where seals exist and unplanned subsequent cable installation is to be carried out this can still be done with other Hilti Firestop Seals. All Hilti Firestop systems permit this, some easier than others:

- CP 611A – work a hole in the seal with a blunt, wooden instrument. Pass the cable through and reinstate with more CP 611A
- CP 660 – Carefully push the cable into the seal away from other cables. Pass through the cable and reseal if necessary with fresh CP 660
- CP 658 – Remove the plugs, fit the cable and reinsert plugs sealing over gaps with CP 611A. Or core a hole in the plug with a piece of plastic conduit slash cut at 45°. Slide through new cable and seal with CP 611A if needed.
- CP 657 - Remove the bricks, fit the cables and reinsert bricks sealing over gaps with CP 611A. Or core a hole in a brick with a piece of plastic conduit slash cut at 45°. Slide through new cable and seal with CP 611A if needed.

- CP 636/637/638 – Diamond core a hole in the compound and feed through new cable. Reseal with CP 611A. Better still, cast in CP 651 cushions or CP 657 bricks when the seal is first made, so that you can remove then for an instant opening.
- CP 670 – Carefully cut a hole for the cable. After it has been installed pack around the cable with loose mineral wool. Seal it with CP 606 and coat cable with CP 670 Coating if required for the fire resistance. An alternative is to fit CP 653 into the CP 670 to permit easy cable changing or addition.

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CE Marking

What is CE marking?:

The 'CE marking' stands for 'Conformité Européenne' (French name but a European requirement). The CE marking attests the verification by a manufacturer that these products meet EU safety, health or environmental requirements. By affixing the CE-mark the manufacturer is responsible for making sure that the performance of the product matches the Declaration of Performance of the product.

There are two routes to CE marking of products

- The supplier can apply for an ETA (obtained by a voluntary process against a EAD (European Assessment Document
- or if there is an existing harmonised standard (hEN), then you are required to have the product tested against it to be able put a CE marking on your products and to put them on the market..

Currently there is no hEN available for Firestop so to achieve CE marking we have to choose the voluntary route and be tested against the relevant European Assessment Document.

For Firestop we have to be careful because of the number of different firestopping applications that exist it is not possible to have a one size fits all standard so the Assessment document allows for many different levels of approval. This means that we should **NOT** take the existence of a CE mark to be the sole criteria to compare different Firestop products in the market. We have to compare the field of application of the product so that we know what was really tested and approved. This field of application is always detailed in the approval (ETA).

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Are Hilti Firestop products CE Marked?

Some are, generally these are the products with a designation starting CFS-.. For historical reasons concerning local approvals most of the Hilti firestop products in GB are sold under designations starting with CP ... in most cases these are identical to products which Hilti sell in other countries with designations starting with CFS- and in many cases these have been certified in accordance with an ETA however because of the different designation the CE Marking cannot be applied to the CP- version. . For the latest information about the current status of our products contact Hilti

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Do I have to use CE Marked Firestop Products to meet the requirements of the Building Regulations

As there is no harmonized European Standard (hEN) for firestop products CE marking can only be obtained by the product manufacturer or supplier choosing the voluntary route and obtaining CE marking by having their product approved in accordance with the ETA process.

As this process is voluntary CE marking cannot be mandated for firestop products at this time.

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Chemical Resistance

I need a firestop which is chemically resistant

While all our products have a certain level of chemical resistance we need to know

-what is the chemical

-what is its concentration

-what is its temperature

-and how long the exposure is (splashes, immersion, constant or periodic)

Contact our Technical Advisory Service with this information.

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CPR

What is the CPR?

The Construction Products Regulation (CPR) is a European Regulation that exists to ensure reliable information on construction products in relation to their performances in a "common technical language" requiring uniform assessment methods of the performance of products.

The CPR is a regulation (i.e. it imposes legal requirements) and is the successor to the CPD (Construction Products Directive) which is not, as such, mandatory in member states. From July 1st, 2013 the CPR becomes a legal requirement.

The CPR requires that applicable construction products should have [CE marking](#) affixed and a [Declaration of performance](#) must be provided along with the product before its incorporation in a construction project

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Curtain Walling

Does Hilti have an equivalent product to foil faced mineral wool for firestopping curtain walling at the slab edge?

When sealing curtain walling, consideration has to be given to movement of the curtain walling. Curtain walling will move during its life and also in a fire. Foil faced mineral wool cannot cope with movement especially under compression as mineral wool slabs do not recover from compression, plus they are generally only tested in concrete/concrete joints. Hilti have two products designed to cope with movement and have been tested on slab edge curtain walling installations. Hilti CP 604 pourable sealant and CFS SP WB Speedspray are tested for glass, concrete, granite and metal panels. They have also been tested for cyclic movement prior to fire testing in a curtain wall application. Your Hilti Project Engineer or our Technical Advisory Service can assist with details and specification.

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Dampers

How do I firestop around a fire damper?

Dampers in ductwork must be fitted in accordance with manufacturer's instructions, i.e. fitted with an installation frame, in line with the wall or the floor and secured to the structure. For details of how to secure the damper, refer to the manufacturer. The damper frame is to permit expansion of the frame due to the heat from a fire.

If the gap is up to 30 mm around the damper frame then it can be packed tightly with mineral wool and sealed with CP 606.

If the gap around the frame is up to 60 mm use CP 636 Fire Resistant Mortar.

If the gap around the damper and its frame is greater than 60 mm then use CP 638 High Strength Compound to secure the damper.

Hilti coated board can be used (CP 670). This is the Type C system incorporating a lightweight support frame. This is the only coated board system that is approved for use with damper penetrations. Contact your Hilti Project Engineer or Hilti Technical Advisory Service for assistance.

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Declaration of performance

What is this Declaration of Performance I have received for your firestop product?

The [Construction Products Regulation](#) requires each manufacturer to supply a "Declaration of Performance" to his customers giving details about the performance of his product, when the product displays [CE marking](#).

It is also a useful document to confirm that the product is applicable to the job in hand.

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Where can I find the DoP's for your Firestop Products?

Declarations of Performance for our ETA approved products can be found [Here](#) in the Internet technical library under Declarations of Performance – Firestop products.

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Derating of cables

Do I need to derate my cables because of your firestop?

The length of cable that is in contact with a firestop seal is not enough to cause a problem with the cable overheating. Because the copper is a good transmitter of heat, dissipation of any heat will occur over the cable that is not in contact with the firestop.

See also [Cable insulation](#)

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Durability

How long before I need to replace your firestop materials?

Hilti state that in the absence of moisture, the life-span of its firestopping products is over 30 years. The products have been tested by immersion in water, then freezing, then baking in an oven before being immersed again to repeat the cycle. After 20 cycles of this wetting and freeze-thaw action they were fire tested to compare the results with as new to see if there was any depreciation in performance. The results allow Hilti to conclude that according to defined criteria Hilti Firestop products have a long-term functionality of 25-30 years. Even then the material may only require inspection to check its condition.

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What is the life expectancy of a Hilti firestop seal?

See [Durability](#)

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Engineering judgements

My application doesn't seem to be covered by your testing and approvals-what can I do?

By providing drawings and full details Hilti may be able to provide you with an engineered judgement. This is a site-specific considered solution based on existing knowledge of product performance as exhibited by the large amount of fire test data not only from BS and EN tests but all other tests that have been performed for Hilti's world markets. The benefit of this solution will be that Hilti will stand by this judgement as an official manufacturer's recommendation. Contact your Hilti Project Engineer or Hilti Technical Advisory Service for assistance.

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Electrical fittings

I've been told that I need to firestop plug sockets and light switches in drywall – why is that?

Electrical fittings are plastic and will burn away exposing the cables and the holes in the drywall for the cables and or the recessed back boxes. These are essentially penetrations in the drywall partition. Drywall gets its fire resistance from the plasterboard. If there is a hole in it the plasterboard has effectively been breached and the fire performance compromised. Electrical fittings that are surface mounted only need to have the cables sealed with CP 611A as they come out of the drywall. If the boxes are recessed then there are two ways of doing this:

Install CP 617 Putty pads. These are sheets of intumescent material that are moulded to the inside of the fitted back box or to the back of the box before the drywall is closed off.

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Environment

I have been asked to provide VOC certificates for the firestop seals that we installed, can you help?

Yes, we have Volatile Organic Compound (VOC) content test certificates available for many of our fire stop products which are located with the Material Safety Data Sheets [Here](#) in our internet technical library

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ETAs (European Technical Approvals)

What is an ETA?

An ETA is a European Technical Assessment (Formally European Technical Approval), this is an approval based on testing carried out to agreed European requirements. For firestop, because there is no harmonised European Standard, the requirements are given in the 'European Assessment Document ETAG 026 Guideline for European Technical Approval of Fire Stopping and Fire Sealing Products' for which there are 5 parts concerning different types of seals and penetrations. These tests include fire testing to the requirement of EN1366 and other tests.

These test results are then assessed by a designated body who issue the approval.

This approval plus the mandatory [Declaration of performance](#) enable the manufacturer to affix [CE marking](#) to their product.

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Explosions (see also [Gas Suppression Systems](#))

Does Hilti have a firestop seal to resist explosions?

Hilti have tested several of its Firestop products to check their capability of resisting explosion. CP 660 has an explosion rating of EPR 4 (NS). To put into perspective, RC 175 mm thick has an EPR 1 rating. The NS classification means no splintering or scabs came off the seal.

CP 670 Type C has also been blast tested and it has an EPR 1(NS) rating.

Other products that have been blast tested are CP 601S and 606 sealants, CP611A intumescent mastic, CP 636 compound and CP 657 bricks.

Contact TAS or your Hilti Firestop Specialist to discuss your needs.

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Fire Engineering

If I use fire engineering for my design can I get rid of firestopping?

No. The various tools that can be used to engineer a fire safe solution through fire engineering still depend on the use of Firestopping. Many of the calculations for fire dynamics, smoke and heat exhaust ventilation are based on the assumption that compartments are sealed and have no extraneous leaks or movement of air. The use of compartmentation is still a basic of fire strategy and so firestopping is needed to maintain compartmentation.

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Foam

I was thinking of just using fire rated expanding foam – is that OK?

If you mean the aerosol cans of polyurethane foams like Hilti CP 125-50 fire rated backing foam then the answer is **No!** Expanding polyurethane foams must not be used on their own except for filling and sealing around the frames of fire doors. If it is shown by fire testing it can do so. Its only other use for fire sealing is as a backfill material before applying fire resistant sealants and intumescent mastics. Hilti can supply details of these applications.

Hilti CP 660 Expanding Fire Seal may also be described as Firestop foam and this is suitable for use in accordance with its application limits as described [here](#) (www.hilti.co.uk/technical >Technical library>Firestop Systems>CP660 expanding fire seal>CP 660)

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Can I use expanding foam with a fire rating B1 according to DIN 4102 for firestopping?

No. Other manufacturers quote a 'fire rating' B1 according to DIN 4102. This is not a fire rating but a material classification to do with surface spread of flame and is a completely different type of test i.e. it is not a fire test in terms of BS 476 Pt. 20 or EN 1366-3. The foam therefore cannot be used for penetration seals using a B1 rating as supporting evidence. This B classification is similar terms to our Class O, 1, 2 ratings. These also are not interchangeable with fire ratings. They are comparative standards. Class 0 means that the material does not burn as fast as class 1 which in turn does not burn as fast as class 2. Fire resistance (as required by firestopping) is a completely different requirement.

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Gas Suppression Systems (i.e. extinguishing gas systems)

Can your firestop systems stand up to the pressure from a gas suppression system?

When a gas suppression system goes off there is effectively an explosion of pressure for this we would consider the explosion testing results for Hilti Firestop products (see [Explosions](#))

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Gas Tightness

Can your firestop products resist the passage of gas?

Hilti Firestop products have all been tested using methane, nitrogen and carbon dioxide at varying pressures and have all found to be very effective at preventing gas leakage. At the pressures required by legislation on air tightness (50 Pa) Hilti Firestop products meet the regulatory leakage requirements.

For details about the chemical resistance of our firestop products see [Chemical Resistance](#).

More information about the Gas and smoke tightness properties of Hilti fireseals can be found in the Firestop Binder [here](#) and in the specific product pages [here](#)

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Health & Safety

Where can I find the MSDS for your Firestop Products?

Material Safety data Sheets and Volatile Organic Compound data sheets can be found [here](#) in the Internet technical library under Material Safety Data Sheets – Firestop and Volatile Organic Compounds data.

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Hilti

Who in Hilti can help me with my firestop queries?

All our account managers and Customer Service representatives receive training in our firestop product range and they can help you with product selection questions for standard details. Our Project Engineers, some specialist Account managers and Technical Advisory Service all receive more advanced training and are better able to deal with more involved questions or to obtain specialist advice when required.

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How do I contact my Project Engineer?

Contact our Customer Services team on 0800 886 100 and they will put you in touch with the relevant person.

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How do I contact Hilti Technical Advisory Service?

By telephone on 0161 886 1144, by Fax on 0161 786 3840, or preferably by email on gbtas@hilti.com

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How do I find more details about individual Hilti Firestop products

Visit our technical library and firestop pages on our internet site at www.hilti.co.uk/cfs where you will find a Firestop Specifiers Binder giving details about the technical

properties of our firestop products along with standard details about their use. You will also find Health and Safety data, downloadable CAD details for inserting into your drawings and BIM details for your documentation.

Technical Advice at your office or Jobsite is also available from our Account Managers who can be supported by our Project Engineers and Firestop Specialists if appropriate.

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Installers

Do Hilti have anybody they can recommend to do some firestopping for me?

Hilti have a list of Specialist Installers who can do this work for you. They are 3rd party accredited giving you assurance that the work will be done correctly. By using a third part accredited installer for your fire protection compliance with regulatory standards can be more easily demonstrated and insurer's requirements are also met. Our Customer Services or Technical Advisory Service can provide contractor details.

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Insulated Pipes

How can I fire seal insulated metal pipes?

See [Pipes, Metal](#)

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Load Bearing Floors

I am not sure whether the infill for a riser needs to be loadbearing

With regard to deciding whether a slab is structural or not, i.e. will it be necessary for it bear the load of a person at any point during its service life, the following must be considered:

A service riser void is normally used only for the purpose of maintenance and repair with no storage, machine or vehicular load being applied. Any resulting loads would occur from personnel, ladders, tools and equipment. Also in the event of a fire the mortar seal must be able to carry the loading from firemen, water and any equipment left behind.

Bearing this in mind, at any point where a slab present within a riser is subject to the load imposed by personnel within that riser, then that slab must be considered in the light of its safe, rather than purely ultimate, load bearing ability. This is, of course, additional to the tensile strength inherent within the material that would allow the slab to support its own weight during its service life.

For any load bearing application within a floor slab Hilti (Gt. Britain) Ltd recommend the use of Hilti CP638 structural grade mortar, rather than Hilti CP637 or Hilti CP636 mortar.

For more information and advice contact your Hilti Project Engineer or our Technical Advisory Service.

See also [Backfill](#)

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M

Maintenance

Do Hilti Fire seals require any on-going maintenance?

See [Durability](#) and [Cables, Reinstallation of](#) and [Paint](#)

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Mineral wool

Why can't I just put mineral wool in the opening?

Loose mineral wool should not be used as a firestop for several reasons

1. It is unsuitable for combustible services (cables and plastic pipes).
2. It will not expand to fill the hole left behind in the case of combustible services.
3. It will not allow movement of metal pipes as it is usually packed in tight
4. It is not smoke resistant

From a legal point of view it does not permit compliance with regulations as it is an unsuitable material for service penetrations. It should only be a backing material in its loose state for Hilti firestop mastics and sealants.

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Mould resistance

With air tightness and increased insulation in buildings, I need products that will resist the growth of moulds and fungi-is Hilti Firestop able to do this?

Hilti Firestop products are tested for their ability to resist mould growth and have been found to resist such fungal growths. For your application and conditions of exposure contact Hilti for details

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Multi Service openings

Your catalogue only shows individual services going through holes, but I have pipes and cables going through openings. What do I use?

The Firestop Specifiers binder on the internet shows several examples of multi service penetrations including:-

For penetrations up to 400 x 400 mm use CP 660. If there are any plastic pipes over 20 mm then they need to be wrapped with CP 648 pipe wrap before the hole is filled with CP 660.

For larger openings use either CP 636/637/638 mortar, again using pipe wraps (CP 648) or collars (CP 643N or CP 644) on plastic pipes and CP 645 Firesleeves on insulated metal pipes before applying the mortar. Alternatively, use CP 670 Coated Board. Cut back pipe insulation and fit CP 643N Pipe collars onto plastic pipes and incorporate into the CP 670 Board.

If you want a seal to be installed in occupied premises, where you wish no mess or you want to remove it at a later date to install further services, use CP 657 Intumescent Blocks. These can cope with plastic pipes up to 50 mm as well as cables and metal pipes with or without insulation.

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P

Paint

I need to be able to paint over the firestopping for decorative purposes-is this alright?

You can paint virtually on all of the Firestop materials. The only exception is CP 601S as this is silicone based.

To paint over firestop use water based emulsions. Avoid epoxy and solvent based paints and varnishes.

Some of the paint finish may be affected by the movement of the firestop seal (e.g. CP 655/657/656 and CP 606). It is best to consult Hilti for advice

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Partition walls

How is it best to firestop plasterboard wall penetrations?

Firstly service penetration openings need to be framed and lined by the partition installer.

This then permits the use of a variety of firestop seals. It needs to be remembered that partitions deflect substantially in a fire so the right firestop need to be selected. If the opening is not framed then CP 660 is the firestop of choice as it has been tested for this application. Firestop products being considered for use must have been tested in partition systems. (See also [Electrical Fittings](#))

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Pipes

Pipes, Plastic

40 mm plastic pipes

Do I need to firestop a 40mm plastic pipe?

See [Waste pipes](#)

[Back](#)**Wrong collar size**

Can I use a 4" collar on a 3-3.5" pipe?

Yes, if you use the next size up of collar up to 110 mm for a plastic pipe this is OK. As long as the annulus is not bigger than 13 mm an oversized collar can be used. To seal against cold smoke use CP 611A mastic around the pipe or between the collar and the pipe.

[Back](#)**Wrong Wrap size**

I've got an intermediate sized plastic pipe-what wrap should I use?

Use CP 648-E 'endless wrap'. This can be cut to length to suit the pipe outside circumference. To determine the number of layers take the next sized 'standard' pipe diameter as a guide. With any pipe warp a suitable backfill is needed. See also [Backfill](#)

[Back](#)**Different Types of Plastic materials (see also [ABS](#))**

I am not sure what the plastic pipe is made of. What should I use to firestop it?

If the plastic is unknown, use either CP 643N or CP 644 pipe collars as these have been tested on a wide range of plastic materials. Therefore they are generic Plastic Pipe collars. The wall thickness should also be used to determine which collar is best suited. You just need to ensure you have the right diameter to suit the outside diameter of the pipe (see [Wrong Collar Size](#)).

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What collar do I use for PVC and PE pipes?

Plastic and PE (known as HDPE) pipes come in differing diameters and wall thicknesses. CP 643N, CP 644 collars and CP 648 Pipe Wraps have been tested on both PVC and PE pipes of differing diameters and wall thicknesses and as such are recommended for use on such pipes. For specific applications consult Hilti.

[Back](#)**Pipe fittings (bends, junctions)**

I've got a junction/bend fitted just as the pipe comes out of the wall/soffit. I can't fit a collar – what do I do?

If access can be had from the other side and the wall is not drywall either, fit a CP 648 pipe wrap into the solid wall/floor and backfill around the wrap with CP 660.

Or fit a CP 645 Firesleeve of appropriate bore size and of a section of length suitable for the substrate.

[Back](#)**Pipes, Metal**

Do I need to use a collar on metal pipes?

No. In fact collars burst open on metal pipes in a fire so making the problem worse. Use a sealant like CP 601S around the pipe where it goes through the wall or floor. The only time to use a pipe collar on a metal pipe is when it is an insulated pipe (steam pipe, chiller pipe etc.).

An alternative to a collar is CP 611A Mastic. If the annulus is big enough (minimum 15 mm) use this around the insulation to a minimum depth of 15 mm. An alternative to this is to remove the insulation and seal the pipe then replace the insulation so that it butts against the face of the wall.

A third and easier way is to remove the insulation where it penetrates the wall or floor and fit a CP 645 Firesleeve as substitute insulation. Tape this to the existing pipe insulation to maintain the vapour seal (if required).

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R

Radiation

What effect does radioactivity have on Hilti Firestop products?

It is difficult to give a precise answer as the type and level of radiation needs to be known. However Hilti have done some testing with radioactivity. For more information and advice contact your Hilti Project Engineer or our Technical Advisory Service.

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Radiation Resistance

Is there a Hilti Firestop that can resist radiation penetration?

CP 639 mortar compound has the ability to firestop and provide a barrier to radiation. Details can be had from your Hilti Project Engineer or our Technical Advisory Service.

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Regulations

Firestopping isn't compulsory – is it?

Yes it is.

In England & Wales the regulation is B3 under the Building Regulations and it is a requirement to prevent internal fire spread. Approved Document B gives guidance as to how to achieve this.

In Scotland, The Building Standards in Regulation 12 asks for something similar about preventing fire spread. Part 2 of The Technical Handbooks give mandatory functional requirements and this supported by prescriptive methods of achieving effective compartmentation.

For occupied buildings the building owner/employer has to conduct a fire risk assessment as required by the Regulatory Reform Fire Safety Order 2005 for England and Wales or under the Fire Safety (Scotland) Act 2005. Part of this assessment is to ensure the building has the required fire protection measures in place and maintained, especially firestopping.

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S

Support for Services near a fire seal

How close to a fire seal do I need to provide support to the services?

Firestop penetrations are a system and the penetrating item, seal and substrate work together. To prevent the firestop seal being mechanically damaged by a collapsing service, the supports for that service need to be adequate in the case of fire. They should be no more than 500 mm from the face of the wall on each side, use fire rated anchors and have drop rods no less than 10 mm diameter or use Hilti MQ channel constructed as a 'goalpost' to support the service penetrating the seal..

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Sleeving

Do I still need to sleeve pipes and services with your firestop materials?

Sleeving is used to allow for movement of pipes. If Hilti firestop sealants and mastics are used to seal around pipes, movement can be accommodated by these without the need for sleeves. Sometimes sleeves are asked for to allow the service to be removed and replaced. Hilti Firestop products can be cut to allow this and replacement is a simple matter with some products requiring minimal if any reinstatement. See [Cables reinstallation](#)

Hilti Firestop is tested without sleeving and firestopping has to be installed as per testing. If sleeving is still insisted on then install Hilti CP 645 Firesleeve.

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Smoke sealing

Do I need to take any extra precautions to smoke seal pipe collars?

If the opening for a plastic pipe penetration is oversized then it requires to be backfilled to prevent cold smoke passing through the compartment element. If the annulus is under 30 mm this can be done with CP 606 Joint Filler to a suitable depth. If the annulus is larger

CP 660 can be used or CP 636/637/638 mortar. Then the CP 643N or CP 644 pipe collar can be fitted.

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T

Temperature

At what temperatures can your Firestop be installed?

Refer to the technical data on each product in our Application guide

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Can your Firestop products be used on hot pipes?

Refer to our technical data in our Application guide. As a guide, intumescent products should be kept away from elevated temperatures (+ 120°C) as this will activate the intumescent materials. Generally, insulate the pipes and then Firestop the insulation. CP 645 firesleeves are a good way of insulating and firestopping hot pipes.

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Does any of your firestop heat up when it cures?

CP 660, 637 and 638 are exothermic.

637 and 638 compounds/mortars will get to 10-15°C above ambient.

CP 660 can get to 50°C above ambient but only locally. The heat is not transmitted very well as the material has excellent insulating properties i.e. low thermal conductivity.

See also [Cable insulation](#)

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Thickness

How thick should fire mastic be?

CP 606- minimum is 6 mm (40% less than our closest competitor) up to 12 mm joint width then depth to width of 1:2 up to maximum depth of 15 mm

CP 601S- 10 mm

CP 611A- 25 mm on single and bunched cables (on each side if it is a wall)
40 mm for plastic pipes up to 50 mm diameter (on each side if it is a wall)

See also [Annulus](#)

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Top of wall joints

What do I use to seal the top of the wall where it meets the soffit?

It is a requirement of Approved Document B that deflection of floors is to be accommodated by suitable gaps at the top of walls. This joint therefore needs to be flexible even during fire conditions. If the wall is concrete or masonry and it is a simple joint, use CP 601S to allow for movement of the floor.

If it is profile deck then you can use:

-loose mineral wool packed in and then coated over with a 5mm layer of CP 606 on both sides (min thickness 100 mm)

-use packed in mineral wool and then spray over with CFS SP WB for a fast installation.

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I was going to use to use preformed mineral wool blocks on the top of wall joint-should I?

As they are a rigid mineral wool material any compression forces will compress the block. Unfortunately they do not recover leaving a gap. Also the blocks do not fill the little channel on profile decks that are there to accommodate the suspension nuts for the service hangers. They therefore cannot provide a full smoke seal which means that eventually hot gases can follow where the smoke goes and may not be an effective fire seal. They can be used but should be sealed over with CP 606, or CFS SP WB.

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Toxic Fumes

What toxic fumes will come off your firestop?

All products in a fire will emit varying types and concentrations of fumes related to their chemical constituency and surface area exposed to fire. In a fire situation the surface area of firestop materials are relatively small in comparison to that of other combustibles such

as fabrics and furnishings. These in themselves will produce a copious amount of smoke and gases. Research by Bayer Chemicals has shown that softwoods, leather, suede and wool produce as much hydrogen cyanide as PU foam. It should be remembered that toxicity in a fire is a combination of several gases produced from different materials. But leaving this aside, the gas which is the most deadly in a fire is carbon monoxide (CO). This is present in all fires and is associated with incomplete combustion. According to Fire Prevention Association a 1.3 % concentration is enough to render you unconscious in 3 breaths and a further 3-4 minutes exposure to that condition will cause asphyxiation. So, in relative terms, firestop products contribute relatively little to the total toxic load of a fire.

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Trunking

What do I seal cable trunking with?

Around the outside quite a few solutions can be used. This is also determined by what other services there are, fire rating required, base material and whether you want access to the services. The main thing to remember with trunking is to firestop the inside with CP 657 foam bricks or CP 651N cushions. CP 657 can be cut to fit the trunking (50, 100, 150 mm square) neatly as the bricks are 100x50x200 mm in size. They can also be used in plastic trunking. Remember to cut the trunking lid in a short section at the point the fire seal goes round it so that access can still be had to the trunking without disturbing the external fire seal. If using CP 651N cushions use a combination of the three sizes available depending on the size of the trunking.

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W

Water

What if the firestop gets wet?

Hilti Firestop products are tested for durability in their cured state. Part of that testing is immersion in water followed by freeze thaw cycling. The products are also tested to an UL standard where they are subjected to a 1m head of water for 16 days, testing the seal mechanically as well as for water resistance. For external or extended/constant exposure contact Hilti for advice

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Waste Pipes

It says in Approved Document B for England & Wales and Scottish Technical Handbooks that anything under 40 mm does not need to be fire stopped. So why should we firestop waste pipes?

That is one interpretation of what it says that in those documents. However, from a practical point of view if you consider the scenario of a 110 mm soil pipe next to a 40 mm waste pipe, then legally you only have to firestop the 110 mm pipe. But what if a fire breaks out? Will it only attack the 110 mm pipe and leave the waste pipe alone? The fact is the waste pipe will permit a 40 mm diameter flame to penetrate the fire compartment floor or wall. When you consider that the Windsor Palace fire started with a plumber's blowtorch, a flame of some 20 mm diameter, then a 40 mm diameter hole in a fire will present a fire hazard. Also, under fire conditions, a 40 mm hole will permit enough smoke to pass in 5 minutes to kill 300 people. It would be prudent to firestop all service penetrations. It is a breach of a fire compartment element. In a standard fire test it would be a weakness that would cause a failure of the element within minutes. Any opening in a fire compartment element renders the integrity of that compartment element, null and void. (see also [Regulations](#)).