HENCO

MADE IN BELGIUM

Henco Sprinkler

Solutions

Sprinkler systems

A sprinkler system is a fire protection system that detects, signals and controls fire. Sprinklers consist of piping systems and special nozzles that disperse water spread when activated. And activation happens when the temperature in the room rises exceptionally and/or there is smoke development. Sprinkler systems are also usually connected to an alarm centre that notifies the fire services.

Originally, sprinkler systems were only found in industrial buildings and warehouses, but nowadays they are also increasingly common in the residential market, to enable safe escape and limit fire damage.

A sprinkler system results in up to 80% fewer fatalities and up to 45% less damage in the event of a fire. Sprinklers can be installed visibly (with visible nozzle) or concealed. In the latter case, only the cover plate is visible.

Sprinkler installations thus effectively save lives and offer several advantages:

Greater fire safety:
The heat and fumes released during the fire determine the survival time of the occupants. From the moment the sprinklers detect fire, they discharge water and thus contain the fire. This gives occupants more time to escape and allows them to do so under safer conditions.

Faster fire brigade intervention:
A sprinkler system is usually connected to a control centre. This can be a private control centre or the regional control centre of the fire brigade. The alarm centre thus receives automatic notification when the sprinklers are triggered, increasing the response speed.

Reliable & effective:
When the heat-sensitive element reacts, the sprinkler nozzles function automatically. Sprinklers also do not react to cooking fumes or cigarette smoke. So accidental activation is avoided.

More favourable insurance rates:
When a sprinkler system is in place, insurance companies often apply favourable insurance rates.

Damage reduction:
By setting the right flow rate and calculating the correct distances, sprinklers keep the fire source(s) under control. This often keeps the fire (and also the consequences) confined to a single room.

Sprinkler piping systems

Steel or PP-R sprinkler systems are often installed surface-mounted, and therefore visible. The color coding for sprinkler systems is red.

However, we see a clear trend towards embedded sprinkler systems. In this case, the sprinkler pipes are embedded in the ceiling or floor so that they are no longer visible. Embedded sprinkler pipes are becoming more and more common because they offer some clear advantages:

- **Space saving:** Because the sprinkler pipes are embedded and not surface-mounted, providing additional room volumes.
- **Cost savings:** because of the space savings, in a building of a certain number of floors you have an extra floor at the same cost compared to surface-mounted sprinkler systems.
- **Aesthetic:** embedded sprinkler pipes offer maximum design freedom and optimum space utilisation. There are no pipes in the way.
- **Additional safety:** with embedded there's no risk of damage and also unauthorised usagee is ruled out.

Sprinkler solutions

Henco currently has no sprinklers in its assortment, but does offer the perfect piping system for sprinkler applications, suited for all common sprinkler nozzles:

- **Flexible multilayer tubes:** up to diameter 32 mm, the pipes can be bent by hand. This not only saves a lot of fittings, but also a lot of installation time.
- **Ready to be embedded:** pipes and fittings do not need to be protected before embedding. The pipes, stainless steel press sleeves and synthetic fittings can be embedded in the concrete without special preparation.
- **VdS approved:** Henco sprinkler solutions have been extensively tested and certified for embedded applications by the German VdS institute.
- **Leak Before Press:** Henco sprinkler fittings feature leak-before-press functionality allowing quick detection of unpressed fittings.
- **Installation convenience:** Henco sprinkler fittings can be pressed with the same tools as sanitary and central heating fittings. So no extra investment in tools required.
- **Correct positioning of sprinklers:** repairing incorrectly installed sprinkler connections is expensive and time-consuming. Henco guarantees correctly placed connections.
- **Repair convenience:** Damaged tube? No problem. Thanks to Henco repair couplers, damaged pipes can be repaired quickly and leak-proof, regardless of diameter.
- **C-factor tubes:** 140. Excellent water conduction and minimal pressure loss.

VdS approved

Henco sprinkler solutions are tested and certified by the German institute VdS according to **CEA 4001 guidelines** and the **EN 12845: 2015+A1:2019 standard**.

The sprinkler piping systems of diameters 32 and 40 mm are certified for pressure loads up to 12.5 bar, diameters 50 and 63 mm for pressure loads up to 10 bar.

The VdS certification covers embedded situations where the following conditions are met:

- Minimum dimensions of the concrete overlay: 60 mm above and below the sprinkler pipes.
- Applied sprinkler nozzles have ½" connection
- Maximum K-factor sprinklers: 80 (for pipe diameter 32 mm). Reaction temperature of the sprinklers 68°C.
- Adding substances to the extinguishing water is not allowed
- No direct contact between synthetic elements and fire sources possible
- Projects in hazard classes LH; OH1 up to and including OH3; OH4 (cinemas, theatres and concert halls only)
  - Fire class LH (light hazardous) refers to non-industrial buildings with a low fire risk, such as hospitals, offices etc.
  - Class OH (ordinary hazardous)

Storage	Permitted fire classes				
	LH	OH1	OH2	OH3	OH4
Glass and ceramics				• Glassworks	
Chemicals		• Cement	• Photographic laboratories • Photographic film • Manufacturers	• Dyers • Soap production • Photographic film production • Paint shops with waterbased paints	
Mechanical engineering		• Sheetmetal work • Manufacturing	• Metalworking	• Electronic manufacturing • Radio equipment manufacturing • Washing machines manufacturing • Car workshops	• Alcohol distilleries
Food and drink			• Slaughterhouses, meat factories • Bakeries • Biscuit production • Breweries • Chocolate production • Confectionery production • Dairy production	• Feed production • Grain mills • Dried vegetable and soup production • Sugar production	
Various	• Schools • Prisons • Offices • Museums • Nursing homes • Hospitals • Fire stations • Hotels/Motels • Holiday homes • Apartment buildings • Libraries (excluding except those with large storage facilities)	• Hospitals • Hotels • Libraries (excluding bookstores) • Restaurants • Schools	• Laboratories • Laundries • Car parks (excluding automatic car parks) • Museums	• Broadcast studios (also film/TV studios) • Railway stations • Factory premises • Farmhouses • Churches with wooden roofs	• Cinemas and theatres • Concert halls

Henco has all the products for state-of-the-art sprinkler installations. Still cannot find what you are looking for or do you have questions regarding your specific project? Do not hesitate to contact us.

A. Tubes

- Available in diameters 32, 40, 50 en 63 mm.
- Diameter 32 and 40 certified for a pressure load of 12.5 bar, diameter 50 and 63 mm for 10 bar.
- C-factor: 140 (excellent water conduction and minimal pressure loss)
- Diameter 32 mm also available on coil for extra ease and speed of installation
- High-quality Henco Standard multilayer pipe
- Can be embedded without any additional protection
- With red printing to indicate sprinkler system

Inner tube made of electron beam cross-linked polyethylene (PE-Xc), extruded from high-density polyethylene granulates.

High-quality connection layer for homogeneous connection between the aluminium pipe and the PE-Xc inner pipe.

Aluminium pipe (AL), longitudinally seamlessly welded and mechanically inspected.

High-quality connection layer for a homogeneous connection between the aluminium layer and the PE-Xc outer pipe.

Outer tube made of electron beam cross-linked polyethylene (PE-Xc), extruded from high-density polyethylene granulates.

B. Fittings

- Fitted with stainless steel press sleeves; can be embedded without additional protection
- Made of high-quality, flexible synthetic material; bending up to 10 % possible!
- With Leak Before Press functionality: unpressed fittings are thus quickly detected between 0.5-2.5 bar initial test pressure
- Available with threaded connections in CW602N or CW617N brass
- Excellent mechanical strength and hardness
- With red printing to indicate sprinkler system
- Complete range including repair couplings up to diameter 63 mm

C. Sprinklerholders/-cups:

The sprinkler holders are crucial for an optimal functioning sprinkler system. They contain the sprinkler nozzles. If the sprinkler holders or cups are not correctly positioned, the sprinkler nozzles will not cover the intended area, which can have disastrous consequences. Henco offers tow series of sprinkler holders: the **50 P** series and the **Henco Pro-Sprinkler** series. Below you find in brief the instructions for a couple building methods. For complete and detailed installation instructions, please consult and follow the sprinkler technical manual.

50P-range

- The sprinkler holders of the 50P series consist of a pre-assembled fitting consisting of a stainless steel cup with threaded connection on which a 100 mm tube is pressed; fitted with sealing caps for protection
- When assembled, the piece of pipe is connected to a synthetic sprinkler fitting
- The 50P series can be used for the following construction methods:

> **Wooden/metal concrete formwork**
Mark on the formwork the location of the sprinkler nozzles. The 50 P sprinker holders are glued to the formwork with the plastic protection cap down. Care should always be taken to ensure that the 50Ps cannot move during concrete pouring. This should be done by attaching the 50Ps to the wire mesh. At the level of the connections of the 50Ps with the rest of the piping system, the pipes should be supported 15 cm from the connections to avoid displacement of the cups due to possible leverage.

> **Wide slabs**
When the 50P sprinkler cups are used in combination with wide slab floors, one has the choice of either embedding the 50P sprinkler holders during the production of the pre-cast / wide slab floors or using a drill bit later on the construction site at the appropriate location to make suitable openings in the pre-cast / wide slab floors, into which the 50Ps will be placed. When 50P sprinkler holders are embedded, they need to be glued to the formwork and connected to the wire mesh for stability reasons. At the construction site, the 50Ps are then connected to the sprinkler piping and the second layer of concrete is poured.
If the 50Ps are not embedded during the production of the wide slabs, suitable openings should be drilled at appropriate locations on the construction site. The 50Ps are lowered into these and fixed at the correct height with brackets. Afterwards, the 50Ps are connected to the sprinkler pipes and everything is embedded.

50P sprinkler holder glued to metal formwork

Not embedded 50P's mounted at the building site

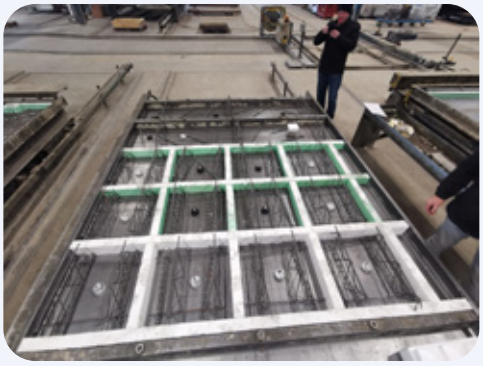
Henco Pro-Sprinkler range

The correct, perpendicular positioning of sprinklers is crucial for a properly functioning sprinkler system, if not, the consequences can be dramatic.

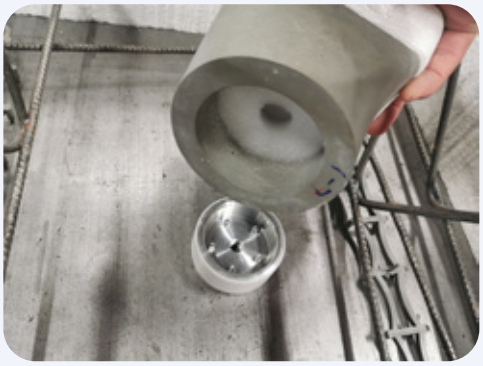
- Correcting an incorrectly positioned sprinkler holder/cup is time-consuming and expensive.
- The Henco Pro-Sprinkler range has been developed to ensure correct positioning of sprinklers and eliminate repair costs. The basis of this solution is a reinforced concrete element that remains correctly positioned even during concrete pouring and into which the sprinkler connections are inserted
- Magnets, glued or screwed fixations (depending on the building method used) can be used to fix the concrete element to the formwork. Below is an overview of the various possibilities. As always Henco offers a solution.
  - > Wooden formwork - screw fixation
  - > Metal formwork - glue fixation
  - > Metal formwork - magnet fixation
  - > Wide slabs - glue fixation (maximum height 88 mm)
  - > Wide slabs - magnet fixing (maximum height 88 mm)
  - > Wide slabs - glue fixation (maximum height 88 - 120 mm)
  - > Wide slabs - magnet fixation (height 88 - 120 mm)
  - > Tunnel construction - magnetic fixation
  - > Tunnel construction - glue fixation

In the sprinkler technical manual you will find installation instructions for all these construction methods. The following are two illustrative examples.

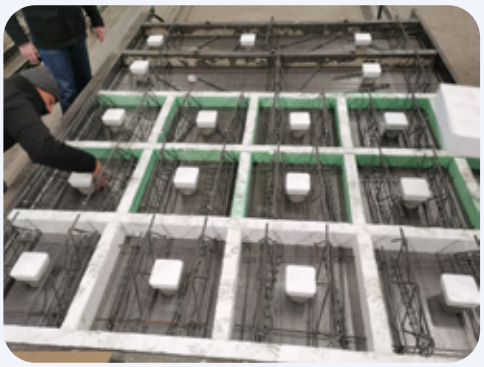
Wide plates with magnetic fixation



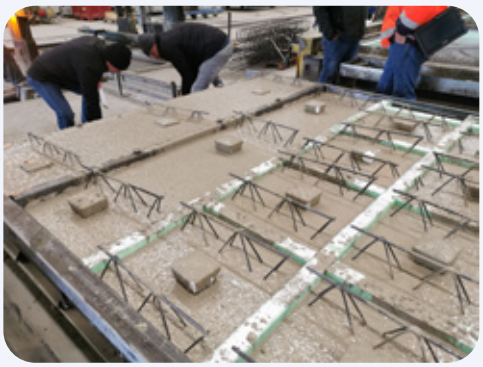
Placing the magnets in the right locations.



Placing the concrete element over the magnet.

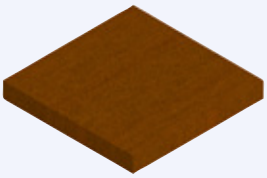


Positioned concrete sprinkler holders with insulation for sealing.

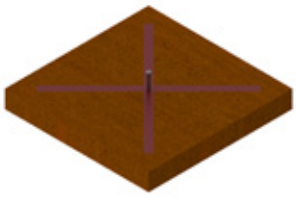


Embedded concrete sprinkler holders. On site, the rest of the pipework and sprinkler fittings are connected.

Procedure for wooden concrete formwork sprinkler head installation

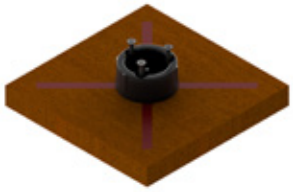


1



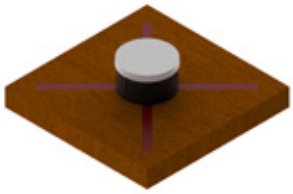
Mark with a nail and/or cross where the sprinklers should be located.

2



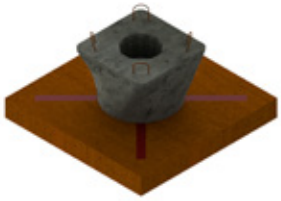
Position and fix the SPR-FIXSCREW fixing element at the locations indicated using 3 screws.

3



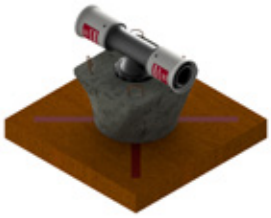
Place insulation SPR-ISO on the fixing element to prevent seepage of concrete water.

4



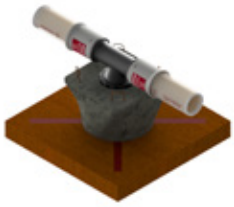
Place the concrete sprinkler holder (SPR-CBLOCK) over the fixing element and press firmly.

5



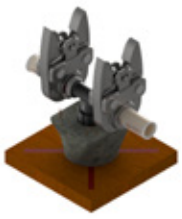
Align the desired press fitting with the pipe system and insert it into the concrete element.

6



Insert the prepared tubes into the fitting.

7



Press the fittings: note when pressing, the fitting can be lifted out of the concrete element.

After pressing, protect the piping system from floating during concrete pouring by securing the fittings to the eyes of the concrete element with tensile straps or braid wire. Use these too to attach the pipes and fittings to the mesh wire. Support the pipes 15 cm from the press connections to counteract any leverage.