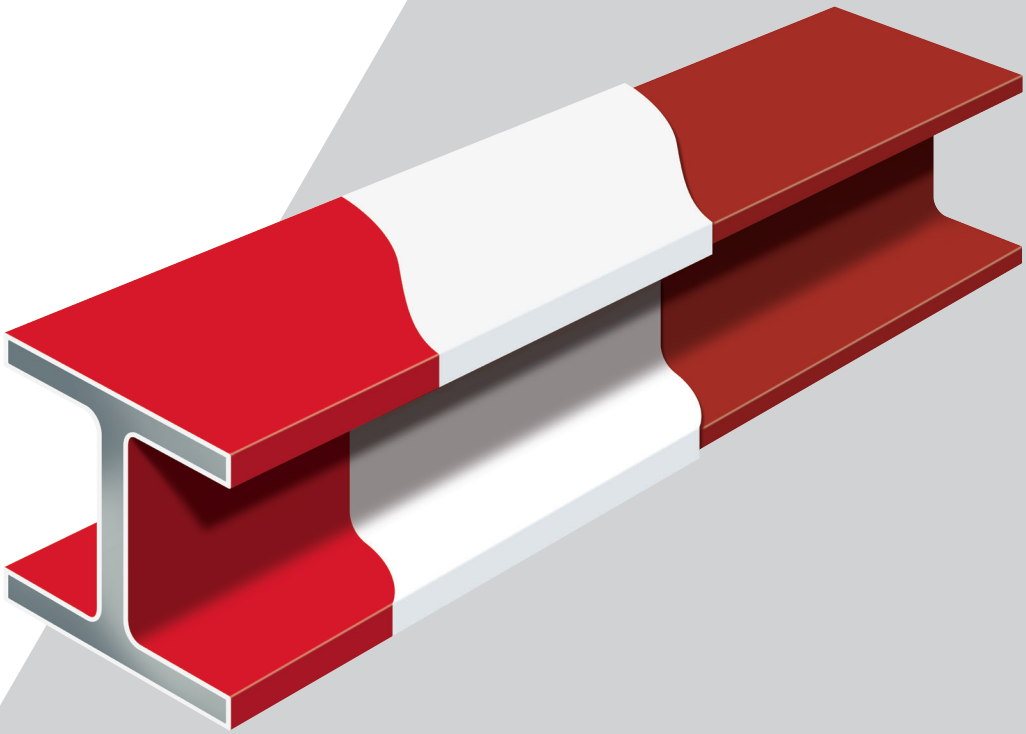
CFP-SP AWHB ALL WEATHER HIGH BUILD

Troubleshooting guide

2025 Edition



Contents

Sagging

What is it?

- Product appears to ‘sag‘ down
- Often, beads of paint pool and run down the surface

Why is this happening?

- Applied Wet Film Thickness (WFT) significantly higher than recommended
- The product was thinned more than recommended
- Applicator stood too close to the structure during application

How to fix it?

- No action required from a fire-safety perspective — no detrimental effect on fire performance as long as required Dry Film Thickness (DFT) is met
- If superior aesthetics are required: sand to smooth surface (caution with DFT)

The maximum WFT per coat of AWHB is 350 mils.

Slumping / sliding

What is it?

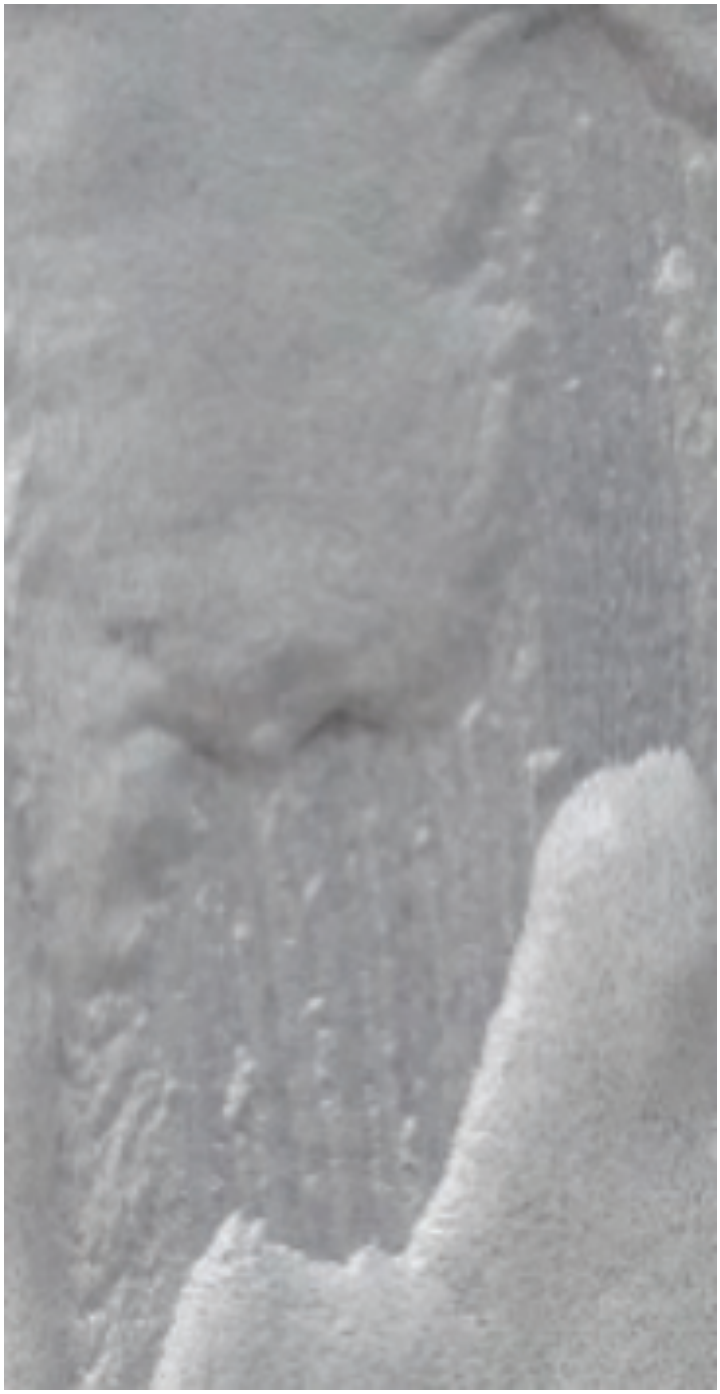
- The intumescent fireproofing does not adhere to the substrate and slides down as a whole layer.

Why is it happening?

- Product applied on top of incompatible substrate/primer
- Surface contamination or presence of water on substrate, leading to improper adhesion

How to fix it:

- Complete removal of the coating



Dry spray

What is it?

- Poor atomization of intumescent material

Why is it happening?

- Applicator stood to far from structure during application
- Application temperature too high and/or humidity too high
- Pump pressure too high

How to fix it:

- Nothing required from a fire-safety perspective — no detrimental effect on fire performance as long as required DFT is achieved
- Ensure pump pressures are within recommendations by manufacturer/in Hilti application guide
- Ensure you are at a correct spraying distance from the surface, and within product spray parameters
- If superior aesthetics are required: sand to smooth surface maintaining proper DFT

Surges

What is it?

- Intumescent material that sprays out from pump in a stream vs. an atomized spray fan

Why this is happening?

- Cavitation of the pump
- Short tip blockage
- Cured material inside the pump

How to fix it?

- Cavitation: ensure sufficient level of intumescent in the pump feed
- Ensure that all connections of the pump are tight, and there is no air entering the pump
- Ensure that there is no dry or cured material inside the pump that can create an uneven flow
- No repairs required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: sand to smooth surface maintaining proper DFT

Slow film curing time

What is it?

In general, when applying AWHB, you can expect the product to:

- Dry/Cure FASTER with Higher Temperature, Higher Humidity, Lower sprayed WFT
- Dry/Cure SLOWER with Lower Temperature, Lower Humidity, Higher sprayed WFT

Why is this happening?

- Temperature and relative humidity outside of the specification
- Product applied at a superior WFT than recommended
- Topcoat applied to soon
- Both components were not properly mixed

How to fix it

- Ensure application conditions are within the AWHB application guidelines
- If the product curing deviates significantly (>48h) from the curing guide table (see Application guide) please contact Hilti's technical service department.

Solvent retention

What is it?

- Solvent trapped on the coating / coat
- Smells after long curing time (weeks)

Why is this happening?

- Product have been thinned too much
- Wrong thinner used. Only Xylene is compatible
- The recoating window was shorter than recommended for the WFT and environmental conditions applied
- Topcoat has been applied earlier than the minimum overcoating window.

How to fix it?

- If the topcoat has already been applied and is not curing, it should be removed via sanding. After the intumescent has fully cured, meeting the requirements outlined in the application guide, the topcoat can be re-applied.
- Prior to applying another layer of intumescent coating or covering with a topcoat, ensure that the re-coating windows and hardness levels meet the application guide requirements
    - **Through cure (DFT readings)**: Shore A 60 or Shore D >16
    - **Recoating with itself:** Shore A 70 or Shore D >25
    - **Top coating:** Please follow the application schedule from the application guide and ensure that Shore D >30
    - **For more information, see application guide:** 8.3 Curing time

Pot life — pot life management

What is it?

- Pot life is the time since both components are mixed and ready to be sprayed until the product becomes too viscous to be sprayed.
- The pot life of the product depends strongly on its temperature and the relative humidity around it.
- As guidance we provide a table representing the pot life of Hilti AWHB at 50% RH:

Temperature F°(C°)	Pot life (min)
41°F (5°C)	30
73°F (23°C)	60
95°F (35°C)	30

Why this is happening?

- Curing (viscosity increase) of the product.

How to fix it?

- The pot life of AWHB can be extended by adding up to max. 2% (by volume) of xylene. In case of dilution, you may see a slower curing time and lower hangability of the applied coating. The WFT to DFT ratio will also be impacted, based on the level of dilution.
- Pot life can be extended 60 minutes more with this dilution.
- It is not recommended to thin down the product more than 2% (by volume)

Product not spraying or flowing through the line

Why is this happening?

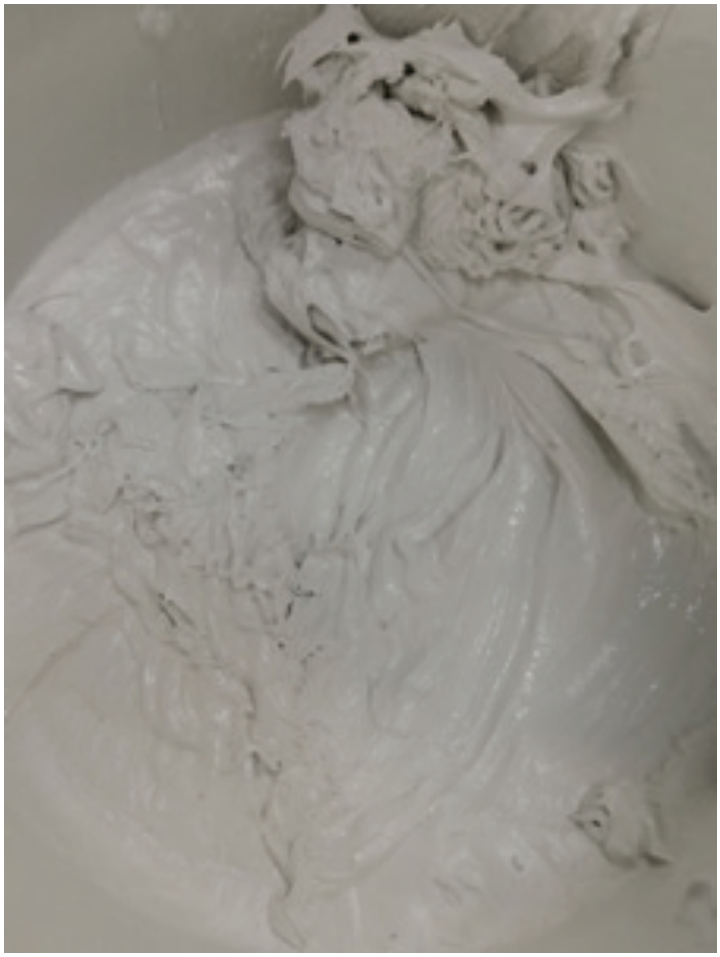
- Equipment may not have been properly cleaned
- Equipment and/or set-up not compliant with the specifications
- Pot life of the product has been exceeded
- Cured material or clogged fibers inside the pump
- Material temperature is below the limit

How to fix it:

- Hilti All Weather High Build CFP-SP AWHB requires moisture free equipment due to its high reactivity to water. Ensure that all previous coating, moisture and incompatible solvent remains are removed prior to application. Only use compatible solvent to clean the spray unit. Ensure that there is NO moisture in the hose, and that it has been flushed with a compatible solvent
- If the line gets clogged, dismount the line from the pump and the gun as well. By reversing the line on the pump and increasing pressure little by little, the line can be unclogged. If this is not working well, the line must be replaced by a new one.
- Ensure equipment, set up, and cleaning meet the requirements outlined in the application guide.

If there is cured material inside the pump: remove the material from the pump and clean the system with Xylene prior to the next application.

Skin formation



What is it?

- A skin layer of cured product can appear at the top of the bucket

Why this is happening?

- Due to the unique chemistry of the product that cures with the moisture of the air, a skin layer of cured material can appear at the top of the bucket
- At high temperature and humidity, the skin layer will appear sooner

How to fix it?

- In order to avoid issues while spraying, it is very important to remove the skin layer with a spatula

To prevent the formation of skin layer you can use one of the following methods:

- Cover the intumescent material in the bucket / hopper with a very thin layer of Xylene. Please note that this may result in slight dilution, especially if incorporated into the material, with the resultant impact on the material and spraying.
- Cover the material directly with a thin plastic sheet or film. Please ensure that the plastic sheet is clean and dry to ensure that it does not interact with the intumescent coating.

Incompatible primer — adhesion problems

What is it?

- The Hilti AWHB does not adhere to the substrate — slides off during the initial spraying / curing process or flakes when dry.

Why is this happening?

- The primer may not be compatible
- The product was applied outside of the specified recoat window of the primer
- Contamination or wet of substrate

How to fix it:

Incompatible primer has been used:

- The Hilti AWHB product MUST be removed completely from the steel member
- Check primer compatibility (ask Hilti Technical service for approved primers list)
- Remove incompatible primer
- Remove contamination of the steel
- Apply approved primer
- Re-apply Hilti AWHB as per UL requirements

Compatible primer with adhesion problems:

- The Hilti AWHB product MUST be removed completely from the steel member
- Remove primer
- Re-apply primer within the specs (check PDS of primer manufacturer for details)
- Re-apply Hilti AWHB as per UL requirements

Incompatible topcoat

What is it?

- Defects on the topcoat such as tackiness might be observed due to its incompatibility with Hilti AWHB

Why this is happening?

- Incompatible topcoat has been used
- Topcoat applied earlier than the recommended overcoating window

How to fix it?

- The topcoat MUST be removed completely ensuring you maintain the proper DFT of the intumescent fireproofing
- Check topcoat compatibility (ask Hilti Technical service for approved topcoat list)
- Apply approved topcoat respecting the overcoating window (check PDS of topcoat manufacturer for details)

Orange peel

What is it?

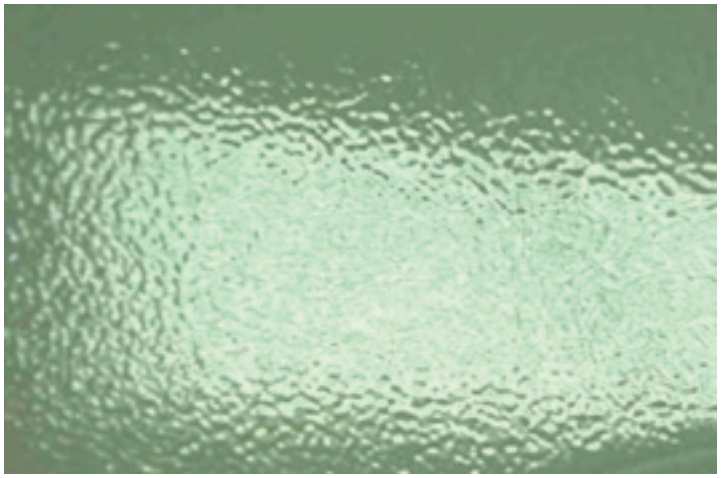
- Rough textured appearance, similar to the peel of an orange, on the surface of the product

Why is this happening?

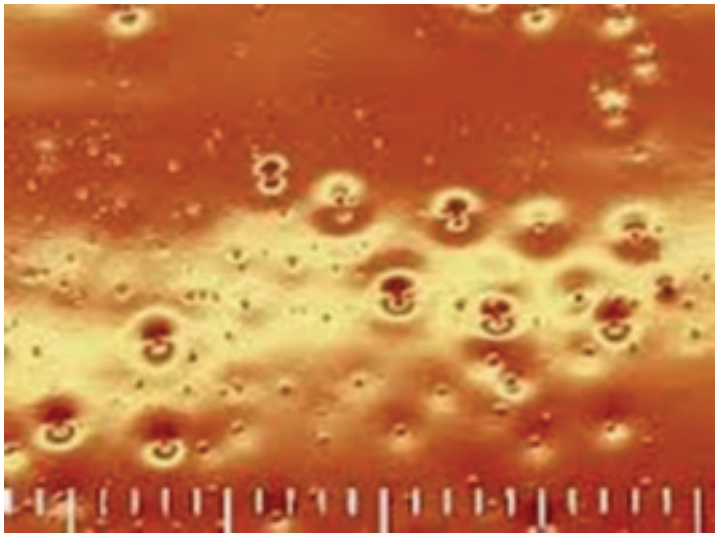
- Normal appearance for high build coatings
- High WFT have a propensity to orange peel
- High gloss topcoat exacerbates the appearance

How to fix it:

- No repairs required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: sand to smooth surface maintaining proper DFT



Cratering (topcoats only)



What is it?

- Pock-marked topcoat (picture on the right)

Why is this happening

- Defect in the topcoat caused by foreign matter
- Frequently observed with polyurethane and silicone topcoats
- NOT a problem of the intumescent

How to fix it

- Ensure that topcoat is properly mixed. When in doubt, filter the topcoat (see recommendations of the topcoat manufacturer)
- For continued issues, contact topcoat manufacturer
- No repairs required from fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: smooth topcoat and re-apply a thin layer

Damaged Hilti AWHB — repairs

What is it?

- Damage/scratches/gouges on the cured AWHB post application

How to fix it?

- Remove the damaged part with a cutter, down to the primer
- Cut in a 45° angle the edge of Hilti AHWB
- If primer have been damaged:
    - Clean the damaged primer by sanding down to steel
    - Re-apply primer with a brush
    - Re-apply Hilti AWHB with spatula or brush as per UL requirements
- If primer has not been affected:
    - Re-apply Hilti AWHB with spatula or brush as per UL requirements

Note: For repairs AWHB must be able to be spread easily by spatula. If the product has gelled (takes some effort to spread) it cannot be used.

Surface dirt

What is it?

- The surface of the coating Hilti AWHB can get dirty, or contaminated, with foreign particles over long exposures to environmental factors.
- Accumulation of foreign particles on the surface of the coating may lead to some mold growth on the accumulated particles over long and adverse environmental exposures.
- CFP-SP AWHB is in itself resistant to mold and mildew, achieving an ASTM G21 Class 0 (No Growth) rating.

Why is this happening?

- Due to different reasons: roughness of the surface, environment, dust deposited, etc.; the surface of the coating can accumulate dirt.

How to fix it?

- A topcoat is recommended to prevent dirt collection by the intumescent coat.
- Options available:
    - Soak a sponge with water and normal soap, rub it gently to the surface till the surface is clean
    - Sand and abrade gently the surface with sandpaper till the surface is clean (please pay attention at DFT reductions)

If the cleaned area DFT has been modified, re-apply Hilti AWHB as per UL requirements.

Wrong mixing

What is it?

- Uncured material (if no part B added)
- Unevenly cured areas.

Why this is happening?

- Forgetting to add Part B to Part A
- Not mixing full kit
- Component A and B have not been mixed properly

How to fix it?

- The product must be completely removed and reapplied.
- To ensure proper mixing, the following steps must be followed:
  - Mix Part A thoroughly with a drill type mixer until homogeneous (>= 1 minute)
  - Shake part B can thoroughly before opening (>= 1 minute)
  - Pour ALL Part B into Part A bucket, and mix thoroughly with a drill type mixer until homogenous (>= 1 minute)
  - Note: Ensure that ALL the Part B product is fully mixed into Part A. Unmixed traces of Part B might stay at the sides of the tin (see picture right), please mix it all until all Part B is fully incorporated. Ensure that you only utilize full kits.
  - It is possible to open and pre-mix Part A before utilizing; however, Part B should be utilized IMMEDIATELY after opening, as it is extremely moisture sensitive.

In the US:
Hilti, Inc.
7250 Dallas Parkway, Suite 1000, Dallas, TX 75024
Customer Service: 1-800-879-8000
en español: 1-800-879-5000
Fax: 1-800-879-7000

www.hilti.com

In Canada:
Hilti (Canada) Corporation
2201 Bristol Circle
Oakville ON I L6H 0J8
Canada
Customer Service: 1-800-363-4458
Fax: 1-800-363-4459

www.hilti.ca

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