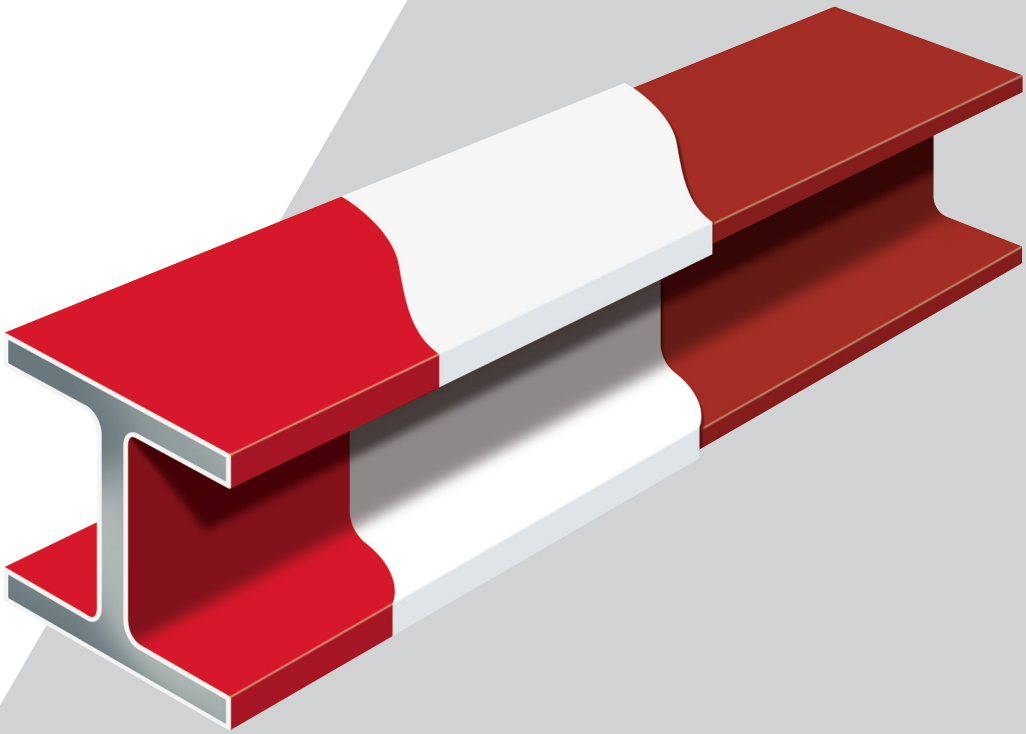
TROUBLESHOOTING GUIDE

Fire Finish 120+ CFP-SP WB

2024 Edition



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WRINKLING

What is it?

- A wrinkled texture on the surface of the product as it cures

Why is this happening?

- Applied WFT is higher than recommended.
- Coated structure exposed to too high air flow and/or high temperature
    - This leads to a ‘skinning’ effect, where the top layer dries before the material underneath has a chance to dry

How to fix it:

- Nothing required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: sand to smooth surface
- If possible, regulate airflow to optimise drying characteristics

Notice:
• All repair MUST ensure that required DFT thicknesses are met as per UL requirements
• Instructions above are general guidelines — always refer to the applicable listing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information

POOR HANGABILITY

What is it?

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

Why is this happening?

- Applied WFT much higher than recommended
- The product was thinned prior to use
- Applicator stood too close to the structure during application

How to fix it:

- Nothing required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: sand to smooth surface

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DRY SPRAY

What is it?

- Poor atomization of intumescent material

Why is it happening?

- Applicator stood too far from structure during application
- Application temperature too high
- Pump Pressure too high

How to fix it:

- Nothing required from a fire-safety perspective — no detrimental effect on fire performance
- 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

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SLUMPING OR SLIDING

What is it?

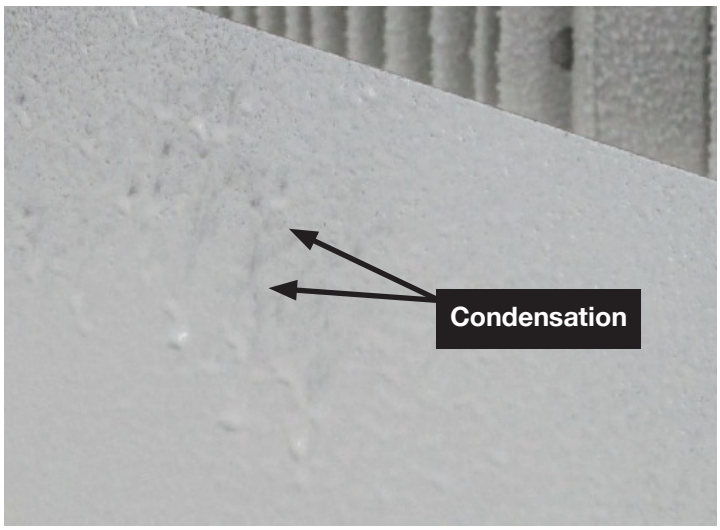
- Wet film thicknesses lower than expected.
- The coating slides down the surface of previous coat

Why is this happening?

- Condensation / moisture on the steel surface
- Surface contaminants (oil, water or other foreign material)
- Thinned product used
- Residual water in the spray pump

How to fix it:

- If the slumped surface achieved the required DFT, nothing required from a fire-safety perspective — no detrimental effect on fire performance
- If the slumped surface did not achieve the required DFT, a new coat must be applied in that area.
- Let the intumescent coating dry completely
- If superior aesthetics are required: sand smooth



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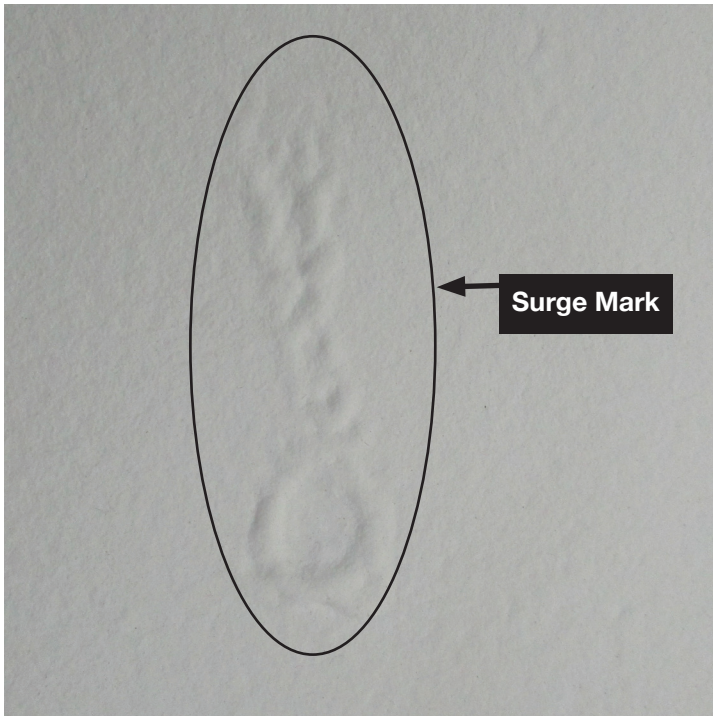
SURGES



What is it?

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

Why is this happening?

- Cavitation of the pump
- Short tip blockage by foreign matter

How to fix it:

- **Cavitation:** ensure sufficient level of intumescent in the pump feed
- No repairs required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: sand to smooth surface
- 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

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CRACKS

What is it?

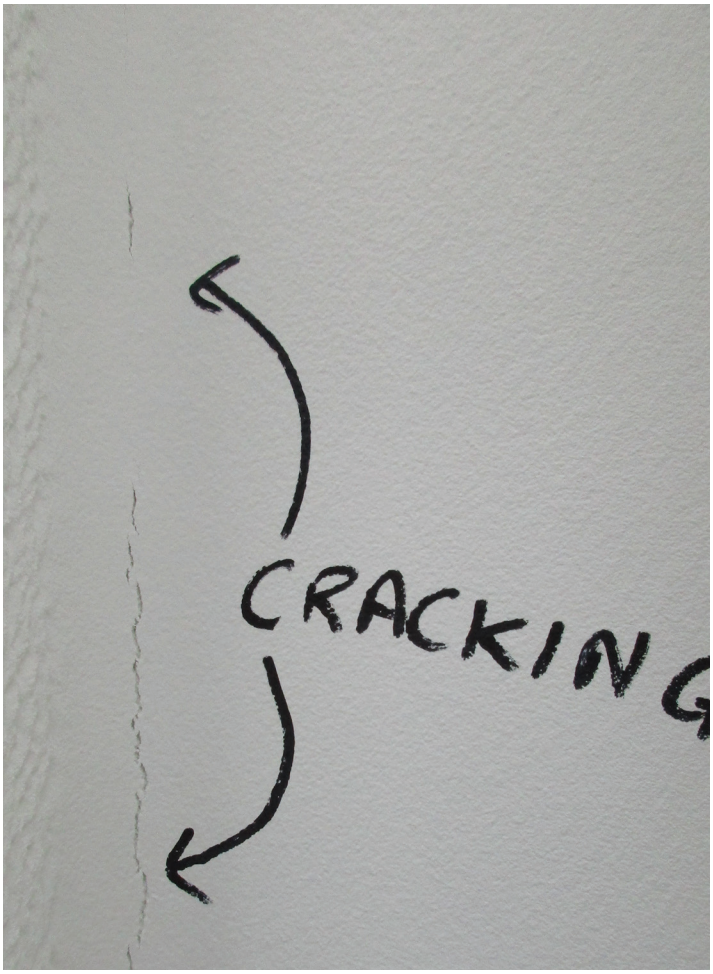
- Physical cracks running through surface of material

Why is this happening?

- Higher than recommended WFT, low air flow, high humidity and cold temperatures.

How to fix it:

- Application of a stripe coat can prevent crack formation if conditions exist that favor crack formation
- For hairline cracks — No repairs required from a fire-safety perspective — no detrimental effect on fire performance
    - All other cracks/gaps must be filled
- If superior aesthetics are required, apply a brush coat of material on top of the crack



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PINHOLES

What is it?

- Minor pinholes/craters in surface of product

Why is this happening?

- Poor atomization
- Air entrapment

How to fix it:

- Check pump settings to ensure parameters are within product requirements
- Check tip for signs of wear, and when in doubt — change it
- No repairs required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: sand to smooth surface

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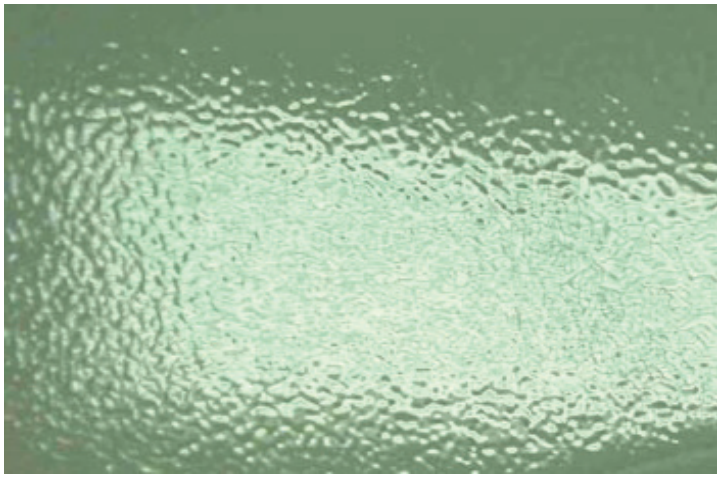
ORANGE PEEL

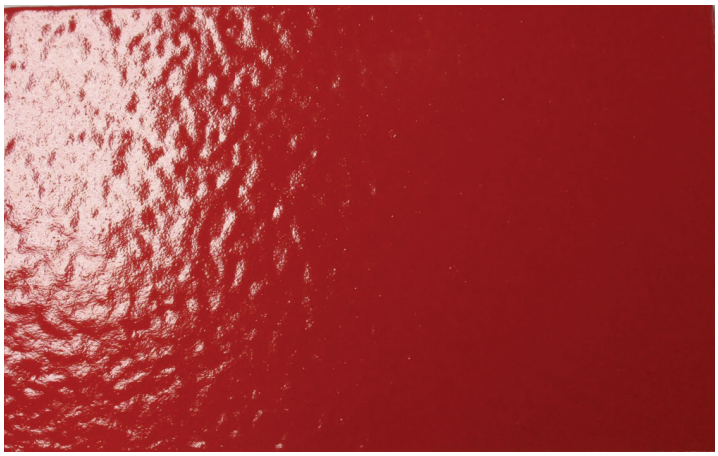


What is it?

- 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 top coat 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

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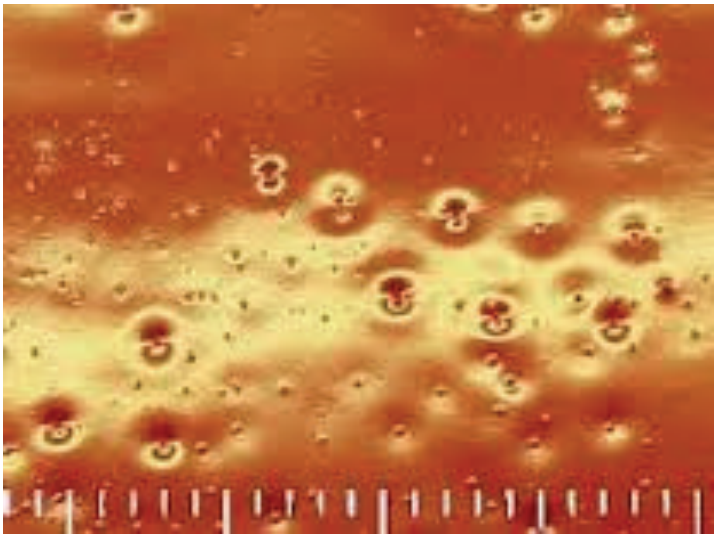
CRATERING (TOP COATS ONLY)



What is it?

- Pock-marked top coat

Why is this happening?

- Defect in the top coat caused by foreign matter
- Frequently observed with polyurethane and silicone top coats
- NOT a problem of the intumescent

How to fix it:

- Ensure that top coat is properly mixed. When in doubt, filter the top coat
- Contact your topcoat manufacturer for continued issues
- No repairs required from a fire-safety perspective — no detrimental effect on fire performance
- If superior aesthetics are required: smooth top coat and re-apply a thin layer

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SLOW DRYING TIME

What is it?
- Product does not dry at expected rates

Why is this happening?
- Temperature and humidity level outside specification
- Low air flow / air exchange
- Fire Finish 120+ applied too thick per coat
- Thinned product used
- Additional coats of Fire Finish 120+ applied too soon

How to fix it:
- Ensure application conditions are within the Fire Finish application guidelines

PRODUCT NOT SPRAYING OR FLOWING

Why is this happening?
- Equipment may not have been cleaned
- Product too cold
- Shelf life of product expired
- Lid left off container for too long
- Material not adequately stirred prior to use

How to fix it:
- Check equipment: tips, pressure, blockages, hose diameter/ length
- Ensure application conditions are within the Fire Finish application guidelines

POOR SPRAY PATTERN / EXCESSIVE OVERSPRAY

Why is this happening?
- Wrong tip size or fan
- Worn tip
- Pressure from pump is too high/too low
- Incorrect hose diameter or length

How to fix it:
- Ensure application conditions are within the Fire Finish application guidelines

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The following issues are indicative of CRITICAL application defects.

In all of these situations, the Fire Finish product must be removed in it's entirety, and then reapplied after fixing the application conditions as outlined in the application guide.

PRODUCT NOT ADHERING TO THE SUBSTRATE

What is it?

- The spray product does not adhere to the substrate — slides off during the initial spraying/drying process

Why is this happening?

- The primer may not be compatible, or the product was applied outside of the specified recoat window (of its primer)
- Contamination of substrate (oil, grease, ...)
- If a brand new pump is being used for the first time, the packing oils in the pump have not been fully cleaned out with solvent followed by throughly flushing out the pump/lines with water

How to fix it:

- The Fire Finish product MUST be removed completely from the steel member
- Check primer compatibility
    - Remove incompatible primer
    - Re-blast steel and apply approved primer
- Remove contamination
    - De-grease, water jet, ...
    - Re-apply Fire Finish as per UL requirements

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EFFLORESCENCE

What is it?

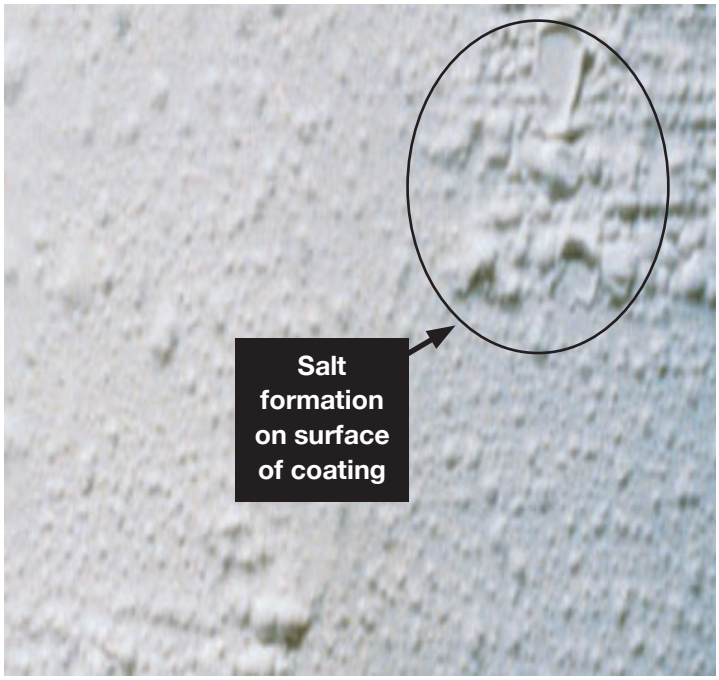
- Looks like there is 'salt formation' on the surface of the material

Why is this happening?

- Exposure to water or use in exterior environments where an approved top coat was not applied

Repair

- The Fire Finish product MUST be removed completely from the steel member and reapplied
    - No way to repair the material — fire performance has been compromised



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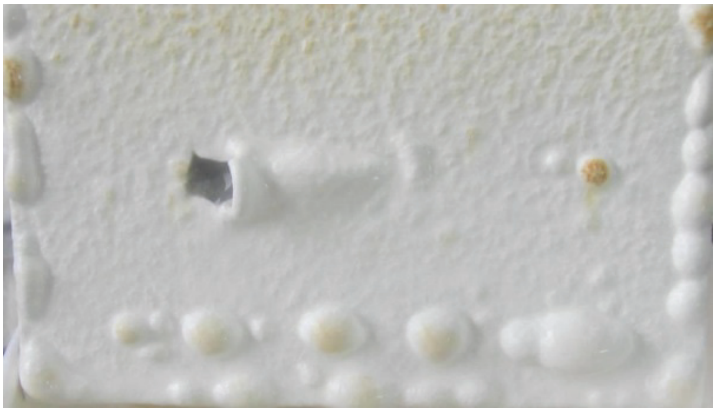
BLISTERING



What is it?

- Surface of the material seems to have ‘blisters’ on it

Why is this happening?

- Exposure to pooling / standing / running water
- Possible surface contamination

Repair

- The Fire Finish product MUST be removed completely from the steel member and reapplied
    - No way to repair the material — fire performance has been compromised

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DELAMINATION

What is it?

- Product delaminates off the steel structure after it is dry

Why is this happening?

- If the product has not cured and does not adhere or if the product is cured and delaminates, product has been applied over incompatible primer
- Contamination of substrate or product
- Moisture ingression over time

Repair

- The Fire Finish product and base Primer MUST be removed completely from the column and reapplied
    - No way to repair the material — fire performance has been compromised
- Re-apply after blast cleaning and priming the steel with an approved primer

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FROST DAMAGE OF THE WET COATING

What is it?

- Coagulated product that can not be stirred up

Why is this happening?

- The product has been frozen and subsequently thawed

How to fix it:

- DO NOT USE: Dispose of complete bucket if freeze indicator is activated

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The data contained in this literature was current as of the date of publication. Updates and changes may be made based on later testing. If verification is needed that the data is still current, please contact the Hilti Technical Support Specialists at 1-800-363-4458. Local base materials were used. Because of variations in materials, on-site testing is necessary to determine performance at any specific site. Printed in the United States.

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