

nC ProTherm CUI-X Thermal Insulating Coating



Description

Based on sol-gel nanotechnology, the nC ProTherm CUI-X coating system is designed for thermal insulation, Safe Touch and corrosion passivation. CUI-X has a long lasting lifetime cycle of more than 20 years outdoors, and life-long expectancy indoors.

Because of the ability to insulate with a very thin layer of coating, nC ProTherm CUI-X offers space saving and cost reducing protection at a high degree of insulation with an U-value at 4,2 W/(m²K) at 6 mm, and a lambda (λ)-value at 0,040 W/(mK).

It provides Safe Touch surfaces and is capable of reducing surface temperatures of for instance steampipes from 160°C down to 40°C. CUI-X is hydrophobic and chemical resistant. It keeps heat and cold in place.

In order to prevent CUI (Corrosion Under Insulation), the nC ProTherm CUI-X coating is equipped with a corrosion passivating primer. The primer surpasses any corrosion protection coating available as it is based on surface bonding nanotechnology (sol-gel). The system will prevent metals from corroding. It will stop already present corrosion.

Both new or blasted metals, as well as already corroded metals (ferro or non-ferro) benefit from this treatment, without the need for chipping or blasting beforehand. This makes it a very fast, cost-effective and environment friendly solution. Because of the chemical bonding, the primer withstands welding temperatures up to 1.500°C, shockloads and chemicals.

This covalent bond offers a flexible protection as it will shrink and expand along with the metal during ambient temperature changes. This way the coating will not crack, as mechanically adhered coatings do. The layer itself offers the look-and-feel of a hard-coat. Both metal and coating are now immune for elevated temperatures, salt, water, chemicals or oxygen. As the cold alloy primer bonds with the metal, it builds a matrix inside the metal surface and withstands abrasion as never seen before. The primer will protect metals against corrosion for more than 20 years.

Because the nC ProTherm CUI-X primer is resistant against welding, it will not get damaged and corrosion will not develop. CUI-X is suitable for long-term immersion in (salt) water or fluids.

nC ProTherm CUI-X is applied by knife or spraygun. It shows a stucco-like, relief finish. nC ProTherm CUI-X can be applied in one layer, between 3mm up to 18 mm and is a fast drying solution. nC ProTherm CUI-X is available in all colours.



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Benefits

TECHNICAL

- ✓ Thermal insulation U-value 4,2 W/(m²K) at 6 mm
- ✓ Lambda (λ)-value at 0,040 W/(mK)
- ✓ Low weight 0,5 gr/m³
- ✓ Bonds into and with surface chemically, not mechanically
- ✓ Passivates metal and rust against corrosion process
- ✓ Hydrophobic, oleophobic surface and behaviour
- ✓ Consumption 1350 gr/m²
- ✓ Performs in temperatures of -90°C up to 440°C
- ✓ Low VOC
- ✓ No hazardous fumes

OPERATIONAL

- ✓ Establishes Safe Touch areas, reduces surface temps by 80%
- ✓ Can be applied by knife or spraygun
- ✓ One layer application between 3mm up to 18mm
- ✓ For indoor and outdoor use
- ✓ No spray mist or overspray
- ✓ Fast drying
- ✓ Suits all metals
- ✓ Space saving
- ✓ Chemical resistant
- ✓ Can operate under water
- ✓ +15 y of service
- ✓ All colours available

FINANCIAL

- ✓ 25% up to 50% less energy cost
- ✓ 40% up to 60% less application/project cost
- ✓ Low cost per m²
- ✓ Fast Return On Investment
- ✓ First-time-right product, fast application, low impact
- ✓ Easy to repair, no cladding replacement cost
- ✓ Very long service time

Application instructions

- ✓ Use safety glasses. Protect hands and skin from exposure using gloves and appropriate clothing.
- ✓ Ensure adequate ventilation.
- ✓ Substrate must be free from grease, dirt or dust.
- ✓ Ambient temperature must be between 4° C and 35° C.
- ✓ Do not apply when ambient humidity exceeds 90%.
- ✓ Mix dry component A 12% weight to resin component B 88% weight. Use (industrial) mixer.
- ✓ Mix for at least 3 minutes.
- ✓ Do NOT use any thinner.
- ✓ Use knife or airgun/spraygun for application.
- ✓ Film thicknesses can be varied from between 3mm to 18mm WFT.
- ✓ DFT >3mm, <6mm for Safe Touch purposes.
- ✓ DFT >5mm, < 19mm for thermal insulation purposes.
- ✓ Cross layer-application is recommended, wet-in-wet.
- ✓ Measure WFT during application. Product expands up from between 5% to 15% during application.
- ✓ nC ProTherm CUI-X will decrease 10% in thickness during curing time.

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Application instructions

Table for curing times, at ambient temperature of 20° C and 60% humidity:

Surface	Curing time
All metals, indoor	12 hrs
All metals, outdoor	24 hrs / 48 hrs, depending on temperature and humidity
Product can be exposed to full rain after 12 hours. Full cure after 7 days	

- ✓ Let surface dry in for at least 6 hours before forced drying by means of blower or heater at 55° C max.
- ✓ Surface can be painted over.
- ✓ Clean knives, nozzles with water immediately after any stop.
- ✓ Wash hands and face after every stop.

Limitations

- ✓ Do not use as a final floor covering.
- ✓ In case of long-term submersion, only install in combination with nC ProTherm H2O finish.
- ✓ Do not install over poor surfaces, such as those with flaking paint, grease or other contaminates.
- ✓ Do not allow application during freezing temperatures.
- ✓ Do not rely on visual measurement for coating thickness. Always use a wet film thickness (WFT) and/or dry film thickness (DFT) gauge in several areas to ensure proper application thickness.

Logistic info

- ✓ Never use pressure to empty drums.
- ✓ Dispose of contents/container in accordance with local/regional/national/international regulations.
- ✓ nC ProTherm CUI-X has a shelf life of 6 months.
- ✓ Store nC ProTherm CUI-X between temperatures of 5° Celsius and 35° Celsius.
- ✓ nC ProTherm CUI-X is available in 5 kg, 20 kg, 65 kg or 350 kg packaging.
- ✓ Delivery time 1 to 3 weeks
- ✓ UN number: None assigned.
- ✓ UN proper shipping name: None assigned.
- ✓ Transport hazard class(es): None assigned. Product is suitable for air transport.
- ✓ Packing group: None assigned.
- ✓ Environmental hazards: No known environmental hazards.
- ✓ Special precautions for user(s): No known precautions for transport.

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Logistic info

- ✓ **It is advised to avoid freezing product.**
- ✓ Guidance on transport in bulk: Transport in bulk according to Annex II of MARPOL 73/78 and the International Bulk Chemical Code (IBC code).

Typical properties

- ✓ Appearance after mixing: White yoghurt, thixotropic
- ✓ Odour: Acrylic
- ✓ % Solids: 72%
- ✓ Solvents: None, water 25,85%
- ✓ Density 0,5 g/cm³
- ✓ pH-Value 11 - 12
- ✓ Shore Hardness A = 30 – 40
- ✓ Boilingpoint 100° Celsius
- ✓ Flashpoint 300° Celsius
- ✓ Vapour pressure at 20° Celsius: 23 hPa
- ✓ VOC IE 2010/75 EU: 2,4% (32,4 g/l)