

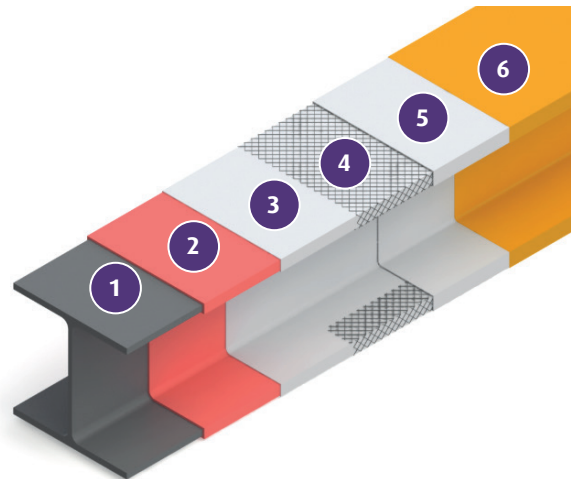
FlexiChar® C20i(H)

Flexible, spray applied intumescent coating for passive fire protection to UL1709:2017 and ISO22899-1:2007

General description

FlexiChar® C20i(H) is a fast curing fully flexible two pack hybrid intumescent coating for use in coatings workshops and onshore/offshore oil and gas and petrochemicals facilities. The system provides up to 120 minutes of fire protection in accordance with the UL1709:2017 and Jet Fire protection in accordance with ISO22899-1:2007 for a duration of 20 minutes for structures and processing equipment. FlexiChar® is applied with an air driven, single leg pump or with a basic specification plural pump.

Product construction



1. Blasted steel substrate
2. Approved primer
3. FlexiChar® C20i(H)
4. FlexiChar® Mesh
5. FlexiChar® C20i(H)
6. Top coat

FlexiChar® C20i(H) is a low VOC, one coat, high build system, based on hybrid polymer technology.

Finish FlexiChar® C20i(H) can be applied to a smooth matt finish. A compatible top seal should be used.

Colour Part A: white
Part B: translucent black
Mixed: off-white
Cured: off-white

Product characteristics

Leading edge application speed and curing time

- Highly efficient single application with mid-depth flange mesh
- Market-leading, thinnest dry film thickness (DFT) across the 60,90,120 mins fire duration in accordance to UL1709:2017
- Complete application of 2-hour UL1709:2017 rating in a single shift
- Jet Fire rating JF/structural steel/210/20 (JF20) in accordance to ISO22899-1:2007
- Maintain flexibility at Arctic temperature (-52°C/-62°F)
- Shower-proof within 60 mins after application and transportable in 8 hours
- Fast, setup time, simplified application with single leg pump
- Suited for structures and element undergoing vibrations.

Temperature considerations

- Operating temperature range for structures and processing equipment:
min: -52°C / -62°F max: +80°C / +176°F
- Low atmospheric temperature limit for site application: -5°C / 23°F
- High atmospheric temperature limit for site application: +40°C / 104°F
- Maintains flexibility at -52°C / -62°F

Additional characteristics

- Hybrid polymer, non-epoxy materials technology
- Low smoke generation as per IMO MSC 307 (88) annex 1, part 2 smoke and toxicity testing
- Direct application over galvanised surfaces and bolts with suitable surface preparation
- Low VOC and no solvent entrapment or prolonged solvent odour.
- Volume solids 85%

Surface preparation and priming

- Substrate must be sound, dry and free from any contamination and surface prepared in accordance with Advanced Insulation guidelines
- Blast until finish complies with Standard SIS 05 59 00, preparation grade SA 2.5 or ISO 8501-1:2007
- Advanced Insulation recommends the use of solvent based epoxy primer for C3 and above environments. Compatibility with each specific epoxy primer should be checked before use
- Primer system should be of specified minimum thickness, fully cured, and within over-coating interval guidelines for the system used
- The system is not suitable for use over single pack primers
- For use over galvanised surfaces or other substrates check with Advanced Insulation technical department before use.

Environmental consideration

- Ensure greater than adequate through ventilation during application
- Application temperature range -5°C / 23°F to +40°C / 104°F, relative humidity <95% and a steel surface temperature at least 3°C / 6°F above the dew point.

Application equipment

Mixing

- Always mechanically mix product in full pack volumes
- Ensure the two components are thoroughly combined until a uniform colour is obtained.

Application advice

- Application of FlexiChar® should only be completed by approved applicators
- Please refer to FlexiChar® application manual before beginning application
- Keep all product containers closed when not in use
- Part B is moisture sensitive and should remain tightly closed before use
- Once opened the kit should be mixed within 15 minutes
- The product should be spray applied at close proximity, 600mm from the surface, to avoid dusting and promote good surface coalescence
- Use of a wet film gauge is essential
- Apply 1.18 mm wet film thickness (WFT) for 1.0 mm dry film thickness (DFT).

Single leg pump application

- Graco extreme 60:1 single leg pump, air driven, electric free (complies with ATEX directive 2014/34/EU)
- Graco mark 5 or equivalent (suitable for onshore and non-explosive areas)

Note: If the user needs to stop spraying for longer than 15 minutes flushing will be necessary.

Plural PFP pump application

- Plural components sprayer, Graco XM, electric free, ratio set up at 5.6:1, no heating required
- Alternative pumps can be considered in consultation with technical team.

Site work

- Galvanised bolts, once degreased, can be coated with no further preparation
- Damaged coatings can be trimmed to a feathered edge and the material trowelled in one application
- The applied product once cured can be easily finished to a high level, by sanding or tooling with either electrical or hand tools.

Cleaning

- Flush spray equipment with xylene solvent (wearing full PPE equipment), do not use solvents which contain water, as these will result in premature curing of the product in the spray line or spray pump.

Loading tables pool fire

(UL1709:2017)

Loading table - in accordance to UL1709:2017 (critical temperature 538°C / 1000°F)

Time period (mins)	Hp/A (m ⁻¹)	DFT (mm)	WFT (mm) or litres per sqm	kg/m ² (Wet)
60	95	4.0	4.7	6.9
	170	4.0	4.7	6.9
	253	4.8	5.6	8.2
90	95	4.0	4.7	6.9
	170	5.2	6.1	8.9
	253	7.4	8.7	12.7
120	95	4.5	5.3	7.7
	170	7.2	8.5	12.4
	253	9.6	11.3	16.5

Loading table Jet Fire

(ISO 22899-1:2007)

Loading table in accordance to ISO22899-1:2007 (critical temperature rise 210°C / 410°F)

Time period (mins)	DFT (mm)	WFT(mm) or litres per sqm	kg/m ² (Wet)
20	10.6	12.5	18.2

Maintenance and repair

Damaged areas should be abraded back to a sound surface. Once repaired top seal should be re-applied.

Top seal

Top seal requirements

Once DFT's have been achieved documented and signed off to QA procedures / installation manual, a top seal can be applied, if desired. Ensure the FlexiChar® C20i(H) is completely cured before applying top seal, at 20°C a period of 48 hours is recommended.

For UV exposure an approved solvent based polyurethane or polysiloxane topseal is required.

Packaging	Packaging	Part A and Part B supplied as 25kg kit (17.1 litres)
	Environmental considerations	Low VOC and no solvent entrapment or prolonged solvent odour
	Availability	Only available direct from Advanced Insulation UK and in-country branches/manufacturing facilities together with licensed Joint Venture partners to customers with NACE qualified supervision, trained and approved and certified QA audited by Advanced Insulation.

Transportation FlexiChar® C20i(H) is compliant with the exemption for all shipping by road (ADR 2.2.3.1.5), as a Class 3 'flammable liquid' under the dangerous goods regulations.

Health and Safety

Health and Safety precautions

Our safety data sheet and installation Instructions must be read, understood and adhered to before use. Flammable - keep away from open flames and other ignition sources.

Personal protective equipment (PPE)

Use in well ventilated conditions and ensure all recommended personal protective equipment is worn during handling and use of this product. For full recommendation, refer to our safety data sheet.

Disclaimer

Exclusion of liability

Information contained in this publication is accurate to the best of the knowledge and belief of Advanced Insulation Ltd (AI). Any information or advice obtained from AI otherwise than by means of this publication, whether relating to AI's products or other materials, is also given in good faith. At all times it remains the responsibility of the customer to ensure that AI's products are suitable for the particular purpose intended.

Insofar as products not manufactured or supplied by AI, used in conjunction with or instead of AI's products, the customer should ensure that they have received from the manufacturer or supplier all technical data and other information relating to such materials.

An Advanced Insulation representative will provide a specification for each project. Advanced Insulation accepts no responsibility for defects arising from failure to follow the specification.

Contact information

For further details about Advanced Insulation systems and services, please contact your nearest project management office:

Advanced Insulation Limited
 Quedgeley West Business Park, Bristol Road, Gloucester, GL2 4PA, United Kingdom

+44 (0)1452 880880
 info@advancedinsulation.com
 www.advancedinsulation.com

© Copyright 2019 Advanced Insulation Limited

Advanced Insulation, ContraFlex®, ContraFlame®, ContraBlast®, ContraTherm® and FlexiChar® are registered trademarks of Advanced Insulation Limited.

Company Registered in England and Wales, registration number 06416439