Guidance Note
Specification Control

Nullifire
Smart Protection

Purpose
The purpose of this document is to provide a general guidance for specification control of systems for use with Nullifire Intumescent Coatings.

Exposure Scenario		Intumescent Specification			Non Intumescent Specification		Expected Lifetime Guidance
		Water Based	Solvent Based	Hybrid	Functional	Aesthetic	
ISO 12944	**EAD**						
C1	Z2	75 microns Carbomastic 15 SC800 Series XX DFT 50 microns Carbothane 134 (optional)	75 microns Carbomastic 15 SC600 Series XX DFT 50 microns Carbothane 134 (optional)	75 microns Carbomastic 18FC (optional) SC900 Series XX DFT 50 microns Carbothane 134 (optional)	75 microns Carbomastic 15 or 100 microns PM020	75 microns Carbomastic 15 50 microns Carbothane 134	Lifetime of building
C2 Internal	Z1	75 microns Carbomastic 15 SC800 Series XX DFT 50 microns Carbothane 134	75 microns Carbomastic 15 SC600 Series XX DFT 50 microns Carbothane 134	75 microns Carbomastic 18FC (optional) SC900 Series XX DFT 50 microns Carbothane 134 (optional)	125 microns Carbomastic 15	100 microns Carbomastic 15 50 microns Carbothane 134	Lifetime of building
C2 External	Y	Not Recommended	75 microns Carbomastic 15 SC600 Series XX DFT 50 microns Carbothane 134	75 microns Carbomastic 18FC (optional) SC900 Series XX DFT 50 microns Carbothane 134	125 microns Carbomastic 15	100 microns Carbomastic 15 50 microns Carbothane 134	Up to 20 years
C3 Internal	Y	75 microns Carbomastic 15 SC800 Series XX DFT 2 x 75 microns Carbothane 134*	75 microns Carbomastic 15 SC600 Series XX DFT 2 x 75 microns Carbothane 134*	75 microns Carbomastic 18FC SC900 Series XX DFT 2 x 75 microns Carbothane 134	225 microns Carbomastic 15	200 microns Carbomastic 15 50 microns Carbothane 134	Up to 20 years[1]
C3 External	X	Not Recommended	75 microns Carbomastic 15 SC600 Series XX DFT 2 x 75 microns Carbothane 134*	75 microns Carbomastic 18FC SC900 Series XX DFT 2 x 75 microns Carbothane 134	250 microns Carbomastic 15	225 microns Carbomastic 15 50 microns Carbothane 134	Up to 20 years[2]
C4 Internal	X	Not Suitable	75 microns Carbomastic 15 SC600 Series XX DFT 2 x 75 microns Carbothane 134*	75 microns Carbomastic 18FC SC900 Series XX DFT 2 x 75 microns Carbothane 134*	250 microns Carbomastic 15	225 microns Carbomastic 15 50 microns Carbothane 134	Up to 20 years[1]
C4 External	X	Not Suitable	75 microns Carbomastic 15 SC600 Series XX DFT 2 x 75 microns Carbothane 134*	75 microns Carbomastic 18FC SC900 Series XX DFT 2 x 75 microns Carbothane 134*	275 microns Carbomastic 15	250 microns Carbomastic 15 50 microns Carbothane 134	Up to 20 years[2]
C5	N/A	Not Suitable	Not Suitable	60 microns Carbozinc 858 150 microns Carbomastic 18FC SC900 Series XX DFT 2 x 75 microns Carbothane 134*	60 microns Carbozinc 858 265 microns Carbomastic 15	60 microns Carbozinc 858 240 microns Carbomastic 15 50 microns Carbothane 134	Up to 15 years[3]
Additional Information							
Open Construction Stage (up to 6 months max.)		With a topcoat (SC804 permitted without topcoat for 3 months max.)	With a topcoat	No topcoat			

Recommendations
- If the project calls for CE marked products, the topcoat selection and application may be limited- please contact a member of the technical team for further information.
- If the project does not call for CE marked products, Nullifire produce and maintain lists of approved topcoats for use with generic families of intumescents, including thickness and over-coating limitations.

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2024-09-V7

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- It is recommended that patch tests are conducted to ensure compatibility before top-coating.
- The thickness of the Nullifire intumescent will be determined by the individual product loading tables.
- It is expected that the environmental category is supplied to Nullifire, and Nullifire will not accept responsibility for incorrect information.
- Specifications above are advised based on high duration durability, based on ISO 12944, with regular preventative maintenance inspection carried out as described.

Galvanised Steel

- If galvanised steel needs to be fire protected, intumescent coatings can be used.
- The guidance given is for fresh or aged galvanised steel.
- The surface preparation required is dependent on the environment and is applicable to all Nullifire intumescent systems.
- For specifications for C1 to C3 Internal environments, the surface preparation recommended is application of a mordant wash or etch primer as per manufacturers recommendations, or a sweep blast to produce a surface profile of 40 microns minimum.
- Where mordant wash or sweep blasting is used, the use of an approved primer is recommended at 25-50 microns. For etch primer, it depends on the specific product used- consult Nullifire.
- For specifications of C3 External and higher environments, only a sweep blast is recommended to produce a surface profile of 40 microns minimum. A standard specification should then be installed as per Nullifire guidance. For specifications of C3 External and higher environments, only a sweep blast is recommended to produce a surface profile of 40 microns minimum. A standard specification should then be installed as per Nullifire guidance.

Notes

- Expected lifetime guidance given based on two component acrylic urethane topctooat being used, typically Nullifire Carbothane 134HP or Carbothane 156 SG. For alternatives, please contact a member of Nullifire technical team.
- Topcoats in the Intumescent Specification may be substituted for any from the approved topcoat list maintaining the DFT and number of coats. Only where * is marked is this limited to any acrylic urethane topcoat from the same list.
- Primer recommendation from “Non-Intumescent Specification” can be used under intumescents for enhanced corrosion protection.
- Primers in the “Intumescent Specification” may be substituted for any from the approved primer list maintaining the DFT above.
- Topcoats in the Intumescent Specification may be substituted for any from the approved topcoat list maintaining the DFT and number of coats. Only where * is marked is this limited to any acrylic urethane topcoat from the same list.

† Recommended but not essential for low duration expectations - reduced lifetime.
‡ Lifetime expectation reduced to 15 years.
[1]- 3 years after installation, documented preventative maintenance inspection required, and minimum every 3 years following. If not carried out, reduced to 10 years.
[2]- 3 years after installation, documented preventative maintenance inspection required and minimum every 1 year following. If not carried out reduced to10 years.
[3]- documented preventative maintenance inspection required every year. If not carried out, reduced to 5 years.

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Technical Service
Nullifire has a team of experienced Technical Specialists who can provide assistance in the selection and specification of products, and material take off calculations. For more detailed information, service and advice, please email technical services international_techserv@carboline.com.

Guarantee / Warranty
Carboline products are manufactured to rigid standards of quality. Any product which has been applied (a) in accordance with Carboline written instructions and (b) in any application recommended by Carboline, but which is proved to be defective, will be replaced free of charge.
The information in this document is intended for guidance only, and is based upon practical experience and laboratory tests which Carboline believes are reliable. It is the responsibility of the Buyer to determine the suitability of the product for its own particular use. Carboline has no control over the quality or condition of substrate, or the many factors that can affect the use and application of the product, and as such Carboline accepts no liability for any loss, injury or damages resulting from such use. Variations in application conditions, procedures and steelwork environments can cause unsatisfactory results, always refer to the application instructions or Carboline Technical Services before use for guidance. Carboline reserves the right to alter product specifications without prior notice, in line with Company policy of continuous development and improvement.
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