TECHNICAL DATA SHEET
SELAC HSS FOR THERMOSENSITIVE SUPPORTS
Series : B XFC epoxy for thermal polymerization
Series : F G PH epoxypolyesters for thermal polymerization
Series : M polyesters for IR-UV photopolymerization

DESCRIPTION

Selac HSS are thermosetting powder coatings for thermal or UV polymerization developed for the coating of MDF (Medium Density Fiberboard) and of other substrates sensitive to strong thermal solicitation .
They can be also succesfully used for the painting of pre-assempled parts containing elements very sensible to heating .
Selac HSS are available in formulations suitable for indoor or outdoor and they grant excellent good properties , as well as a very good adhesion to the substrates , combined with good chemical , physical and mechanical properties .
It is possible to design formulas with enhanced aesthetic properties .
These products are applicable with corona or tribo electrostatic systems .

GENERAL PROPERTIES

High reactivity
Excellent mechanical properties
Outstanding resistance to ageing in outdoor environments
Very good corrosion resistance
Very good aesthetic properties

SERIES

Selac B - F - G - PH for ultrafast thermal polymerization
Selac M for IR - UV photopolymerization

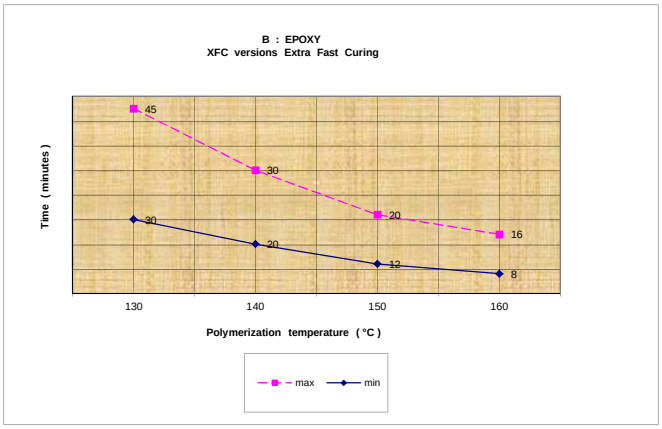
COLOURS AND EFFECTS

Possibility of a complete colour range
Gloss range from 50 up to 95 gloss
Smooth or fine textured finish
Possibility of taylor-made versions on demand

THERMAL CURING CONDITIONS

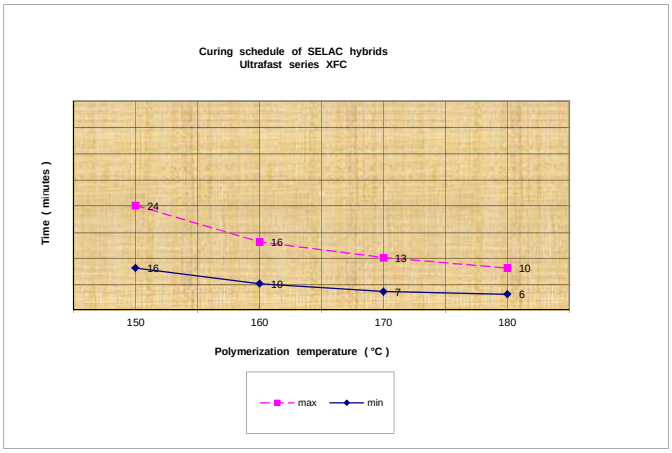
Drafts interpretation
To obtain functional , optical and aesthetic properties mentioned in TDS the curing schedule adopted for the products must be in any point of the draft area comprised between the curves of minimum and maximum .
Times always refer to object temperature (PMT) , being the heating time variable from item to item and from plant to plant .

XFC EPOXY



Minimal conditions (PMT)
30' @ 130°C - 20' @ 140°C - 12' @ 150°C - 8' @ 160°C

XFC EPOXYPOLYESTERS



Minimal conditions (PMT)
18' @ 150°C - 10' @ 160°C - 7' @ 170°C - 5' @ 180°C

PHOTOPOLYMERIZABLE POLYESTERS

These products must be cured on lines equipped with a preliminary IR phase able to melt the powder and to bring it to at least 130°C .
Suggested radiating power is 32 KW/mq .
The very fast radicalic reaction occurs in a following phase under UV lamps whose type , irradiance and number and position must be defined in each single case .
An irradiance of 80 -160 W/cm is normally sufficient to obtain a proper result .
Items having very complex shapes (cavities or hidden areas) may create further application and polymerization difficulties .

PREPARATION OF METALLIC SUPPORTS

Painting must be done on clean support , free from oil , grease , oxidation , residuals of working , welding and rinsing processes , and any contaminating agent must be avoided
Iron and steel : iron or zinc salts phosphatization
Aluminium : cromatation or chrome-free pretreatment are recommended
Hot dipping galvanized steel : according with the item adopt mechanical treatment , phosphatization or chromatation process .

PREPARATION OF NON-METALLIC SUPPORTS

Heat sensitive substrates must be able to resist at 140°C , at least ,
and must have enough conductivity to allow application with the normal electrostatic corona or tribo spraying devices .
A resistivity around $10_{10} – 10_{11}$ Ω/cm² is usually sufficient .
On MDF or on other similar substrates a paper-sanding or surface thermal burn-out are suggested to remove surface imperfections , which could negatively affect the level of surface finish .
Density , humidity , thermal stability , type of the binder and of wood fibers are elements to be considered to avoid deformations or cracks of the support .
All supports must be previously tested by the final user .

THICKNESS

Minimal recommended thickness is 60 microns , but in any case the coating layer must completely cover any surface roughness , especially in case of sandblasted supports .
For fine textured products the minimal suggested thickness is 80 micron .
About photopolymerizable products it is necessary to consider that film thickness may have a negative effect on depth crosslinking , also according with the colour .

APPLICATION METHODS AND RECYCLE

The application is possible with manual or automatic electrostatic devices , both corona and tribo .
Overspray can be recycled in the fresh powder and re-used , but the use of integral recycle is not recommended at all ; do not exceed 25% and maintain a constant feeding of fresh powder .
On metallic products an indicative ratio is 10% , but an unproper management of the recycle may result in remarkable variations of the effect , therefore it must be evaluated in each single case ; please contact arsonsisi s.p.a. and refer to the technical informative note about application of metallics .

TECHNICAL FEATURES

Specific gravity : 1,3 to 1,7 g/cc , according colour and formula
Theoretical yield at 60 micron : 13 to 10 sqm/kg according colour and formula
Brilliance range at 60° : 20 to 95
Average particle size (laser Malvern) : 32 - 45 micron
X99 particle size (laser Malvern) : 95 - 150 micron
********** NOTE : taylor-made particle size distributions are possible on demand**

MECHANICAL PROPERTIES OF THERMAL CURING PRODUCTS

Test conditions : trials are made on normalized UNI 5961 panels 0,6 mm thick , degreased with solvent , coated with 70 - 80 micron of powder completely cured .
Mentioned results are obtained under controlled lab conditions ; therefore these values are merely indicative and must be confirmed in the actual use conditions under the responsibility of each single user .

Minimal polymerization conditions (PMT)
10' @ 180°C - 8' @ 190°C - 7' @ 200°C
Thickness : 70 - 80 micron .
Direct impact : min. 30 Nm (ISO 6272)
Erichsen embossing (ISO 1520) : min. 4 mm
Cylindrical mandrel (ISO 1519/73) : pass 3/16" = 5 mm
Adhesion (ISO 2409) : GT 0/1
Buchholz hardness (ISO 2815) : min. 85
Pencil hardness (ASTM D3363) : H - 2H

CORROSION AND DURABILITY

Test conditions : trials are made on normalized UNI 5961 panels 0,6 mm thick , treated by microcristalline zinc salts phosphatization , or on AA 5005-H24 chromatated aluminium panels , coated with 70 - 80 micron of powder completely cured .
Mentioned results are obtained under controlled lab conditions ; therefore these values are merely indicative and must be confirmed in the actual use conditions under the responsibility of each single user .

Salt spray test (ISO 3768 / ASTM B117)
Support UNI 5961 steel treated by zinc phosphate
After 500 hours rust penetration at the cross-hatch : max. 4 mm
Saline-acetic spray test (ISO 9227)
Support UNI 5961 steel treated by zinc phosphate
After 1000 hours rust penetration at the cross-hatch : max. 16 mm
Humidostatic test (ISO 6270)
Support UNI 5961 steel treated by zinc phosphate
After 1000 hours no film variation
Chemical resistances at room temperature (25+/-3°C)
Generally good versus diluted acids and diluted alkalis
Sufficient versus aromatics , moderate versus ketons and alogenated
The behaviour versus very aggressive or concentrated agents or under different conditions must be verified by the user

STORAGE AND STABILITY

Products must be stored in the original sealed packagings , in a cool and dry place and at a temperature not exceeding 30°C .
In these conditions products of thermal curable series are stable for a period of 6 months .
Photoplymerizable product are stable for a period of 3 months .
Always consult the specific TDS of each single product or contact arsonsisi s.p.a.

RECOMMENDATIONS

These informations are given on the base of our best experience as well as the one of specialized laboratories and they are continuously updated , nevertheless the user has the complete responsibility to apply and to experiment the products according its own specific necessities .
This document has the intention to describe and summarize the main properties of arsonsisi products , but in no case it can be considered as a warranty for them . Further informations about application of metallic effects , maintenance of goods coated with homologated polyesters or availability of special versions are mentioned in specific technical integrative notes .