FIRE RETARDANT ARCHITECTURAL WOOD COATING

ASTM E84 CLASS B

FIRESHELL

FST006
FIRE RETARDANT TREATMENT

FS007
POST CAT FIRESHELL SELF SEAL
Available in different gloss

www.duro-lak.com

- Easy to apply
- Water base sealer
- Solvent base top coat
- Fire retardant system
- Fast drying
- Excellent mar & scratch resistance
- Good chemical resistance

duro-lak inc

3020 Le Corbusier, Laval, Quebec, Canada, H7L-3W2 Phone: (450) 687-140 Fax: (450) 687-9886
1065 Stacey Court, Mississauge, Ontario, Canada, L4W-2X7 Phone: (905) 625-7785 Fax: (905) 625-7798

duro-lak INC.
TEL.: (450) 687-4140
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3020, BOUL. LE CORBUSIER, PARC INDUSTRIEL, LAVAL, QC H7L 3W2

REV-01

ORGANIC FLAME TREATMENT FST006

PROPERTIES

None hygroscopique solution
Water white

Excellent for any type of wood exotic woods, rosewood, ebony, american walnut, etc...

TECHNICAL DATA

1)	Color:	Clear
2)	Appearance:	Non color liquid
3)	Weight/gallon:	9.62 lbs / US Gal. 11.59 lbs / Imperial
4)	VOC	0 lbs / US Gal. 0 lbs / Imperial Gal.
Comply with		FAR 25.853 A & B

Sand with 220 grit

Apply 1 coat at 2 to 3 mils wet to the whole complete surface

Air dry 12 hour

Or

30 minutes @ 120°F

METHOD OF APPLICATION

Conventional:	Spray gun HVLP Fluid tip fine finish	Air assisted airless	Air pressure 45-50 P.S.I.G. Air flow 30-35 S.C.F.M.

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POST CAT FIRE-SHELL SATIN FS 007-20

FIRE-SHELL IS A FIRE RETARDANT SELF SEAL CONVERSION VARNISH, NON OXIDIZING, NON YELLOWING , AS A RESULT OF A ITS HIGH BUILD UP FIRE-SHELL GIVES A GOOD DEPTH EFFECT AND WEALTH OF FINISH, IN ADDITION TO AN EXCELLENT COLOUR RESTITUTION. THE OPTIMUM HARDNESS IS ACQUIRED VERY FASTLY IN COMPARISON TO EQUIVALENT PRODUCTS IN THE MARKET. AND IT GIVES AN OUT STANDING CHEMICAL RESISTANCE TO HOUSE HOLDS , THUS IT MEETS ALL THE KCMA STANDARDS REQUIREMENTS.
THIS PRODUCT IS ENVIRONMENTAL COMPLIANT: NO ISOCYANATES, ULTRA LOW FORMALDEHYDE EMISSION.
IT IS DESTINATED TO ALL WOODEN OR WOOD DERIVATIVE SUBSTRATES USED WHERE FIRE RETARDANCY AND FLAME SPREADING ARE AN ISSUE. FS007-20 IS FORMULATED TO MEET ALL THE "CLASS B" FIRE RETARDANT COATINGS REQUIREMENTS OF THE AMERICAN SOCIETY FOR THE TESTING AND MATERIALS (ASTM) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.

THIS PRODUCT IS RECOMMENDED FOR INTERIOR USE ONLY.
ASTM E-84 CLASS B

Finishing Procedures

1) The substrate should be sanded using 150-180 grit paper

2) Apply a wet layer of the Organic Flame Treatment FST006. Let it dry 24 hours before applying FS007-20.

3) The substrate should be thoroughly dried before the application of the subsequent layers of the Fire Shell FS007-20.

4) In order to fulfill all the requirements of a Class B coating system , two coats is require of Fire Shell
5) FS00-20 catalyzed , should be applied.
The wet film thickness required should be between 5 to 6 mils.

5) Sand in between using 320-400 grit paper. After 2 hours at least

5) Fully cure each coating layer, before applying the subsequent one.

6) Catalyze under a good mixing. Let catalyst sweat in for 15 min. before applying.
keep under constant agitation, during the finishing process.

7) Always use fresh material and catalyse using FS180 10% Vol.

8) Apply FS007-20 on surfaces free of contamination.
Apply with :
HVLP
Conventional
Air less
Air assisted
(use fine finish nozzle with good atomization.)

10) Flash off: 30 min. To 1 hr. Under good ventilation

11) Drying: at 70-75°F & 50% relative humidity.
Touch free 15-20 minutes.
Handle: 45-60 minutes.
Through dry 10-12 hours
Oven 120-140° F surface temperature 1Hr.

12) Each varnish surface to be coated within 8 hours from sanding .

Technical Data: **POST-CAT FIRE-SHELL SATIN** **FS007-20**

Viscosity as supplied	27-29 Sec..... Ford #4 @25°C
Weight per Gallon	10.07 Lbs. per gal Imp. @ 25°C
Gloss/Sheen	20°
Weight Solids	53 ± 1 %
Shelf-life	12 Months..... Unopened original container
	Keep dry and avoid direct sunlight.
V.O.C.	4.02 Lbs./Gal. U.S.
Color	Translucent
Cold check resistance	20 cycles at 3 mils dry, -40°F + 140°F.
Catalyzation	10% with FS180
Reduction	FSR189 10% if necessary
Working temperature	15-22°C / 65-75°F for 50%.R.H. *Avoid extreme.*
Application viscosity	20 ± 2 sec on Ford #4 at 20°C.
Stackable	24 hr
Maximum film at application	6 mils wet
Pot life	8 hr
ASTM-E 84 Classification	**CLASS B**

Method of application

Abnormal temperature and humidity conditions will have a negative impact on the final result. The customer should take the necessary precautions to avoid this.

Conventional spray:

Spray gun HVLP
Fluid tip: Fine finish
Air pressure: 45-50 PSIG
Air Flow: 30-35 SCFM

Air assisted airless

Nozzle size.009 or .013 inches
fluid pressure 30-60 P.S.I.

NOTE: AVOID WATER CONTAMINATION

NOTE: The information, rating & opinion stated above pertain to a material currently offered and represent the result of laboratory evaluation. The customer's application and other requirements are unknown, or are not under our control, the company cannot make any warranties or guarantees as to results.

DISCLAIMER: Neither Duro-Lak Inc. nor its marketing agents shall be responsible for the use of this information, or of any product, method or apparatus mentioned. You must have your own determination of product suitability and thoroughly qualify it for serviceability, for environmental acceptability, and for impact on the health and safety of your employees and purchases of your products. Duro-Lak's only obligation shall be to replace such quantity of the product which is proven to have been defective. No person is authorized to make any statement or recommendation not contained herein, and any such statement or recommendation so made shall not bind Duro-Lak Inc. **Keep in mind that: You're the only person able to determine if the suggested product is suitable for the intended applications .**

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REV-01

CATALYST FS180

PROPERTIES

DESCRIPTION:	Catalyst for FireShell FS007 line
MIXING RATIO::	10% by volume
DENSITY:	0.895
FIRE HAZARD:	3
HEALTH HAZARD:	2

Catalyzed FS007 line with 10% of FS180.

For more information, please contact our Technical Support Department at Duro-Lak inc Phone : (450) 687-4140

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REV-01

REDUCER FOR FIRESHELL FSR189

PROPERTIES

DESCRIPTION:	Reducer for FS007 line and FS021 line
FLASH POINT	28°C Close cup
DENSITY:	0.859
FIRE HAZARD:	3
HEALTH HAZARD:	2

VOC:	861 grms / L
UN:	1263
CLASS:	3
Packaging Group:	II

Reducer for FS007 line & FS021 line

Colour: Clear transparent

Reduction: 5-10% if necessary

Use this solvent to clean containers & spray equipment.

Shelf life: 1 year

For more information, please contact our Technical Support Department at Duro-Lak inc Phone : (450) 687-4140

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME :	DURO-LAK INC.
STREET ADDRESS:	3020 LE CORBUSIER
CITY, STATE & ZIP CODE :	LAVAL, QUEBEC, H7L 3W2
COUNTRY:	CANADA
TELEPHONE NO:	(450) 687-4140
EMERGENCY PHONE NO:	(613) 996-6666

DATE: June 2, 2017

SECTION I - MATERIAL IDENTIFICATION

Product name	FIRESHELL TREATMENT
Product code	FST006
Sheen	
Material use	Industrial finish FAR 25.853 (A) (B)
W.H.M.I.S. classification	Non Hazardous

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	# C.A.S.	ACGIH TLV/PPM	CONC. %	LEL	VAPOUR PRESSURE
Organic Phosphoric Ester	756-79-6		60-100		

SECTION III - PHYSICAL DATA

Physical state	Gas ( ) Liquid (x) Solid ( )	Odour & appearance	Liquid CLEAR, petroleum odour.
Vapour density	Not Available	Odour threshold	Not Available
Evaporation rate	Slower than ether	Specific gravity	1.159
Boiling point (•C)	Not Available	% volatile (by weight)	0%
Freezing point (•C)	Not available	VOC	0 grms/lt
Coef Water / oil dist	Not available	Weight per gallon	11.59 lbs./gal. imp

SECTION IV - FIRE OR EXPLOSION HAZARD
FST006

Flammability... If yes, under which conditions?	Means of extinction
Yes (x) Can ignite at temperature above the flash point or on hot surfaces above the auto-ignition temperature. No ( )	Water Spray ( ) Carbon Dioxide (x) Dry Chemical (x) Foam (x)

Special Procedures: Explosion hazard. Fight fire from behind an explosion proof barrier. Use self-contained breathing equipment and protective clothing.

Flash Point (*C) and Method	>93° C TCC	Auto Ignition Temperature (*C)	Not Available.
TDG Flammability Classification	N/A	U.E.L. (% per volume):	Not Available.
Sensitive to Impact	Not Available	L.E.L. (% per volume):	Not Available.

Sensitivity to Static Discharge	
Hazardous Combustion Products	Carbon Dioxide, Carbon Monoxide and Nitrogenous products.

SECTION V - REACTIVITY DATA

Chemical Stability:	Stable
Incompatibility with other substances:	Strong oxidizing agents
Conditions of Reactivity:	
Hazardous Decomposition Products (if any):	

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry:	Skin Contact (x) Ingestion (x) Inhalation Acute (x) Skin Absorption (x) Eye Contact (x) Inhalation Chronic (x)
Irritancy:	Is a severe irritant.
Carcinogenicity:	Contains a suspect carcinogen.
Mutangenicity:	May cause heritable genetic damage.
Teratogenicity:	May cause birth defects.
Reproductive Toxicity:	May be toxic to foetus (animal studies).
Sensitization to Product:	May cause allergic skin reaction.
Effects of Acute Exposure to Material:	May be harmful if absorbed through skin. Serious eye irritation. May cause dizziness, headache and nausea if inhaled. Working in confined space could lead to unconsciousness. Highly toxic if swallowed.
Effects of Chronic Exposure to Material:	May affect: Skin, Eyes, Blood, Lungs, Stomach, Intestinal tract, Liver, Kidneys, Central nervous system, Heart. May cause: Dermatitis, Skin ulcers, Eye Ulcers.
Exposure Limits:	As exposure limits such as TLV, LD50 and LC50 have not been determined on formulated products, all available information has been listed with the hazardous ingredients in section II.

SECTION VII - PREVENTIVE MEASURES

Personal protective equipment	Use silicone free barrier cream, solvent resistance gloves, impermeable footwear, and protective clothing, Wear chemical safety goggles. Use air-purifying respirator with dust and vapour removal canisters.
Engineering controls	Use local ventilation with minimum of ten air changes per hour
Leak and spill procedure	Eliminate immediately all sources of ignition. Evacuate all personnel. Use self-contained breathing equipment. Dyke spill. Do not flush into sewers. Ventilate. Absorb with sand. Place in sealed containers. Avoid sparks. May be toxic to aquatic and animal life.
Waste disposal	Use sanitary landfill or incinerator in accordance with local, provincial and federal regulation.
Handling procedures and equipment	Vapours heavier than air causing health, explosion hazards. Do not breath the vapours or spray mist. Avoid formation of electrostatic sparks and discharges. Keep containers tightly closed when not in use. Use in well ventilated areas. Wash before meals, before using toilets and at end of shift. Launder contaminated clothing before re-use.
Storage requirements	Keep from moisture and rain. Keep in a cool place away from flames, sparks and hot surfaces. Keep away from freezing.
Special shipping information	Keep away from freezing

SECTION VIII - FIRST AID MEASURES

Skin	Wash affected areas with soap and water. Remove contaminated clothing, If irritation persists, see doctor
Eyes	Flush immediately with water for 15 minutes, see doctor
Inhalation	Remove to fresh air. Aid breathing, see doctor at once
Ingestion	Do not induce vomiting, see doctor at once.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME:	DURO-LAK INC.
STREET ADDRESS:	3020 LE CORBUSIER
CITY, STATE & ZIP CODE:	LAVAL, QUEBEC H7L 3W2
COUNTRY:	CANADA
TELEPHONE NO.:	(450) 687-4140
EMERGENCY PHONE NO. :	(613) 996-6666

DATE:June 2, 2017

SECTION I - MATERIAL IDENTIFICATION

Product name	FIRE SHELL 20° (FS180X10%)
Product code	FS007-20
Sheen	
Material use	Industrial finish
W.H.M.I.S. classification	Class B, Division 2 / Class D, Subdivision A, Division 2

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	# C.A.S.	ACGIH TLV/PPM	CONC. %	LEL	VAPOUR PRESSURE
Xylol	1330-20-7	100	15-40	1.0	9.5
N-Butanol	71-36-3	50	7-13	1.4	4.7
Formaldehyde	50-00-0	1	.01-1.0	7.0	

SECTION III - PHYSICAL DATA

Physical state	Gas ( ) Liquid (x) Solid ( )	Odour & appearance	Petroleum odour, Opaque liquid
Vapour density	Heavier than air	Odour threshold	Not available
Evaporation rate	Slower than ether	Specific gravity	1.007
Boiling point (°C)		% volatile (by weight)	47%
Freezing point (°C)	Not available	VOC	483 grms/ lt
Coef Water / oil dist	Not available	Weight per gallon	10.07

SECTION IV - FIRE OR EXPLOSION HAZARD

FS007-20

Flammability... If yes, under which conditions?	Means of extinction
Yes (x) Can ignite at temperature above the flash point or on hot surfaces above the auto-ignition temperature. No ( )	Water Spray ( ) Carbon Dioxide (x) Dry Chemical (x) Foam (x)

Special Procedures: Explosion hazard. Fight fire from behind an explosion proof barrier. Use self-contained breathing equipment and protective clothing.

Flash Point (*C) and Method	4°C TCC	Auto Ignition Temperature (*C)	Not Available.
TDG Flammability Classification	Not Available	U.E.L. (% per volume):	Not Available.
Sensitive to Impact	Not Available	L.E.L. (% per volume):	Not Available.

Sensitivity to Static Discharge	
Hazardous Combustion Products	Carbon dioxide, Carbon monoxide, & nitrogenous products.

SECTION V - REACTIVITY DATA

Chemical Stability:	Stable.
Incompatibility with other substances:	Strong Oxidizing Agents.
Conditions of Reactivity:	
Hazardous Decomposition Products (if any):	

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry:	Skin Contact (x) Ingestion (x) Inhalation Acute (x) Skin Absorption (x) Eye Contact (x) Inhalation Chronic (x)
Irritancy:	Is a severe irritant.
Carcinogenicity:	Contains a suspect carcinogen.
Mutangenicity:	May cause heritable genetic damage.
Teratogenicity:	May cause birth defects.
Reproductive Toxicity:	May be toxic to foetus (animal studies).
Sensitization to Product:	May cause allergic skin reaction.
Effects of Acute Exposure to Material:	May be harmful if absorbed through skin. Serious eye irritation. May cause dizziness, headache and nausea if inhaled. Working in confined space could lead to unconsciousness. Highly toxic if swallowed.
Effects of Chronic Exposure to Material:	May affect: Skin, Eyes, Blood, Lungs, Stomach, Intestinal tract, Liver, Kidneys, Central nervous system, Heart. May cause: Dermatitis, Skin ulcers, Eye Ulcers.
Exposure Limits:	As exposure limits such as TLV, LD50 and LC50 have not been determined on formulated products, all available information has been listed with the hazardous ingredients in section II.

SECTION VII - PREVENTIVE MEASURES

FS007A

Personal protective equipment	Use silicone free barrier cream, solvent resistance gloves, impermeable footwear, and protective clothing. Wear chemical safety goggles. Use air purifying respirator with dust and vapour removal canisters.
Engineering controls	Use local ventilation with minimum of ten air changes per hour.
Leak and spill procedure	Eliminate immediately all sources of ignition. Evacuate all personnel. Use self contained breathing equipment. Dyke spill. Do not flush into sewers. Ventilate. Absorb with sand. Place in sealable containers. Avoid sparks. May be toxic to aquatic and animal life.
Waste disposal	Use sanitary landfill or incinerator in accordance with local, provincial and federal regulation.
Handling procedures and equipment	Vapours heavier than air causing health, explosion hazards. Do not breath the vapours or spray mist. Avoid formation of electrostatic sparks and discharges. Keep containers tightly closed when not in use. Use in well ventilated areas. Wash before meals, before using toilets and at end of shift. Launder contaminated clothing before re-use.
Storage requirements	Keep away from moisture and rain. Keep in a cool place away from flames, sparks and hot surfaces. Keep away from freezing.
Special shipping information	Keep away from freezing.

SECTION VIII - FIRST AID MEASURES

Skin	Wash affected areas with soap and water. Remove contaminated clothing. If irritation persists, see doctor
Eyes	Flush immediately with water for 15 minutes, see doctor
Inhalation	Remove to fresh air. Aid breathing, see doctor at once
Ingestion	Do not induce vomiting, see doctor at once.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME; DURO-LAK INC.
STREET ADDRESS: 3020 LE CORBUSIER
CITY, STATE & ZIP CODE: LAVAL, QUEBEC H7L 3W2
COUNTRY: CANADA
TELEPHONE NO.: (450) 687-4140
EMERGENCY PHONE NO. : (613) 996-6666

DATE: June 2, 2017

SECTION I - MATERIAL IDENTIFICATION

Product name	FIRESHELL CATALYST
Product code	FS180
Sheen	
Material use	Industrial finish
W.H.M.I.S. classification	Class B, Division 2 / Class D, Subdivision A, Division 2 Class E

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	# C.A.S.	ACGIH TLV/PPM	CONC. %	LEL	VAPOUR PRESSURE
N-Butyl Acetate	123-86-4	150	30-60	1.4	10
Isopropanol	67-63-0	400	15-40	2.3	33
Butanol	71-36-3	50	15-40	1.4	4.7
P-Toluene Sulfonic Acid	104-15-4	N/A	10-30	N/A	N/A

SECTION III - PHYSICAL DATA

Physical state	Gas ( ) Liquid (x) Solid ( )	Odour & appearance	Clear liquid. Petroleum odour.
Vapour density	Heavier than air	Odour threshold	Not available
Evaporation rate	Slower than ether	Specific gravity	0.895
Boiling point (°C)	80°C	% volatile (by weight)	86%
Freezing point (°C)	Not available	VOC	771 grms / lt
Coef Water / oil dist	Not available	Weight per gallon	8.95 lbs/gal.

SECTION IV - FIRE OR EXPLOSION HAZARD

Flammability... If yes, under which conditions?	Means of extinction
Yes (x) Can ignite at temperature above the flash point or on hot surfaces above the auto-ignition temperature. No ( )	Water Spray ( ) Carbon Dioxide (x) Dry Chemical (x) Foam (x)

Special Procedures: Explosion hazard. Fight fire from behind an explosion proof barrier. Use self-contained breathing equipment and protective clothing.

Flash Point (*C) and Method	14°C TCC	Auto Ignition Temperature (*C)	Not Available.
TDG Flammability Classification	3 (8)	U.E.L. (% per volume):	Not Available.
PIN UN2924 Flammable liquid corrosive n.o.s		Packing Group	II
Sensitive to Impact	Not Available	L.E.L. (% per volume):	Not Available.

Sensitivity to Static Discharge	
Hazardous Combustion Products	Carbon dioxide, Carbon monoxide.

SECTION V - REACTIVITY DATA

Chemical Stability:	Stable.
Incompatibility with other substances:	Strong Oxidizing Agents.
Conditions of Reactivity:	
Hazardous Decomposition Products (if any):	

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry:	Skin Contact (x) Ingestion (x) Inhalation Acute (x) Skin Absorption (x) Eye Contact (x) Inhalation Chronic (x)
Irritancy:	Is a severe irritant.
Carcinogenicity:	Contains a suspect carcinogen.
Mutangenicity:	May cause heritable genetic damage.
Teratogenicity:	May cause birth defects.
Reproductive Toxicity:	May be toxic to foetus (animal studies).
Sensitization to Product:	May cause allergic skin reaction.
Effects of Acute Exposure to Material:	May be harmful if absorbed through skin. Serious eye irritation. May cause dizziness, headache and nausea if inhaled. Working in confined space could lead to unconsciousness. Highly toxic if swallowed.
Effects of Chronic Exposure to Material:	May affect: Skin, Eyes, Blood, Lungs, Stomach, Intestinal tract, Liver, Kidneys, Central nervous system, Heart. May cause: Dermatitis, Skin ulcers, Eye Ulcers.
Exposure Limits:	As exposure limits such as TLV, LD50 and LC50 have not been determined on formulated products, all available information has been listed with the hazardous ingredients in section II.

SECTION VII - PREVENTIVE MEASURES

Personal protective equipment	Use silicone free barrier cream, solvent resistance gloves, impermeable footwear, and protective clothing, Wear chemical safety goggles. Use air purifying respirator with dust and vapour removal canisters.
Engineering controls	Use local ventilation with minimum of ten air changes per hour.
Leak and spill procedure	Eliminate immediately all sources of ignition. Evacuate all personnel. Use self contained breathing equipment. Dyke spill. Do not flush into sewers. Ventilate. Absorb with sand. Place in sealable containers. Avoid sparks. May be toxic to aquatic and animal life.
Waste disposal	Use sanitary landfill or incinerator in accordance with local, provincial and federal regulation.
Handling procedures and equipment	Vapours heavier than air causing health, explosion hazards. Do not breath the vapours or spray mist. Avoid formation of electrostatic sparks and discharges. Keep containers tightly closed when not in use. Use in well ventilated areas. Wash before meals, before using toilets and at end of shift. Launder contaminated clothing before re-use.
Storage requirements	Keep away from moisture and rain. Keep in a cool place away from flames, sparks and hot surfaces. Keep away from freezing.
Special shipping information	Keep away from freezing.

SECTION VIII - FIRST AID MEASURES

Skin	Wash affected areas with soap and water. Remove contaminated clothing, If irritation persists, see doctor
Eyes	Flush immediately with water for 15 minutes, see doctor
Inhalation	Remove to fresh air. Aid breathing, see doctor at once
Ingestion	Do not induce vomiting, see doctor at once.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME;	DURO-LAK INC.
STREET ADDRESS:	3020 LE CORBUSIER
CITY, STATE & ZIP CODE:	LAVAL, QUEBEC H7L 3W2
COUNTRY:	CANADA
TELEPHONE NO.:	(450) 687-4140
EMERGENCY PHONE NO. :	(613) 996-6666

DATE:June 2, 2017

SECTION I - MATERIAL IDENTIFICATION

Product name	FIRESHELL REDUCER
Product code	FSR189
Sheen	
Material use	Industrial finish
W.H.M.I.S. classification	Class B, Division 2 / Class D, Subdivision A, Division 2

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	# C.A.S.	ACGIH TLV/PPM	CONC. %	LEL	VAPOUR PRESSURE
Xylol	1330-20-7	100	60-100	1.0	9.5
Buthanol	71-36-3	50	10-30	1.4	4.7

SECTION III - PHYSICAL DATA

Physical state	Gas ( ) Liquid (x) Solid ( )	Odour & appearance	Petroleum odour clear,
Vapour density	Heavier than air	Odour threshold	Not available
Evaporation rate	Slower than ether	Specific gravity	0.858
Boiling point (°C)		% volatile (by weight)	100%
Freezing point (°C)	Not available	pH	Not available
Coef Water / oil dist	Not available	Weight per gallon	8.58

SECTION IV - FIRE OR EXPLOSION HAZARD
FSR189

Flammability... If yes, under which conditions?	Means of extinction
Yes (x) Can ignite at temperature above the flash point or on hot surfaces above the auto-ignition temperature. No ( )	Water Spray ( ) Carbon Dioxide (x) Dry Chemical (x) Foam (x)

Special Procedures: Explosion hazard. Fight fire from behind an explosion proof barrier. Use self-contained breathing equipment and protective clothing.

Flash Point (*C) and Method	28EC TCC	Auto Ignition Temperature (*C)	Not Available.
TDG Flammability Classification	Not Available	U.E.L. (% per volume):	Not Available.
Sensitive to Impact	Not Available	L.E.L. (% per volume):	Not Available.

Sensitivity to Static Discharge	
Hazardous Combustion Products	Carbon dioxide, Carbon monoxide, & nitrogenous products.

SECTION V - REACTIVITY DATA

Chemical Stability:	Stable.
Incompatibility with other substances:	Strong Oxidizing Agents.
Conditions of Reactivity:	
Hazardous Decomposition Products (if any):	

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry:	Skin Contact (x) Ingestion (x) Inhalation Acute (x) Skin Absorption (x) Eye Contact (x) Inhalation Chronic (x)
Irritancy:	Is a severe irritant.
Carcinogenicity:	Contains a suspect carcinogen.
Mutangenicity:	May cause heritable genetic damage.
Teratogenicity:	May cause birth defects.
Reproductive Toxicity:	May be toxic to foetus (animal studies).
Sensitization to Product:	May cause allergic skin reaction.
Effects of Acute Exposure to Material:	May be harmful if absorbed through skin. Serious eye irritation. May cause dizziness, headache and nausea if inhaled. Working in confined space could lead to unconsciousness. Highly toxic if swallowed.
Effects of Chronic Exposure to Material:	May affect: Skin, Eyes, Blood, Lungs, Stomach, Intestinal tract, Liver, Kidneys, Central nervous system, Heart. May cause: Dermatitis, Skin ulcers, Eye Ulcers.
Exposure Limits:	As exposure limits such as TLV, LD50 and LC50 have not been determined on formulated products, all available information has been listed with the hazardous ingredients in section II.

SECTION VII - PREVENTIVE MEASURES

Personal protective equipment	Use silicone free barrier cream, solvent resistance gloves, impermeable footwear, and protective clothing. Wear chemical safety goggles. Use air purifying respirator with dust and vapour removal canisters.
Engineering controls	Use local ventilation with minimum of ten air changes per hour.
Leak and spill procedure	Eliminate immediately all sources of ignition. Evacuate all personnel. Use self contained breathing equipment. Dyke spill. Do not flush into sewers. Ventilate. Absorb with sand. Place in sealable containers. Avoid sparks. May be toxic to aquatic and animal life.
Waste disposal	Use sanitary landfill or incinerator in accordance with local, provincial and federal regulation.
Handling procedures and equipment	Vapours heavier than air causing health, explosion hazards. Do not breath the vapours or spray mist. Avoid formation of electrostatic sparks and discharges. Keep containers tightly closed when not in use. Use in well ventilated areas. Wash before meals, before using toilets and at end of shift. Launder contaminated clothing before re-use.
Storage requirements	Keep away from moisture and rain. Keep in a cool place away from flames, sparks and hot surfaces. Keep away from freezing.
Special shipping information	Keep away from freezing.

SECTION VIII - FIRST AID MEASURES

Skin	Wash affected areas with soap and water. Remove contaminated clothing. If irritation persists, see doctor
Eyes	Flush immediately with water for 15 minutes, see doctor
Inhalation	Remove to fresh air. Aid breathing, see doctor at once
Ingestion	Do not induce vomiting, see doctor at once.

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ASTM E 84 Surface Burning Characteristics of "FS006 & FS007" Coating System on Wood Substrate

A Report To:	**Duro-Lak Inc.** 3020, boulevard Le Corbusier Laval, QC H7L 3W2
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Attention:	Sylvain Charpentier
Submitted by:	Exova Warringtonfire North America
Report No.	12-002-610 4 Pages
Date:	August 30, 2012

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine the Flame Spread and Smoke Developed Indices based upon a single test conducted in accordance with ASTM E 84-12, as per Duro-Lak Inc. Purchase Order No. 000011949 dated August 10, 2012.

SAMPLE IDENTIFICATION (Exova sample identification number 12-002-S0610)

Coating system, applied to oak substrate, identified as:
"FS006 & FS007" Coating

TEST PROCEDURE

The method, designated as ASTM E 84-12 "Standard Method of Test for Surface Burning Characteristics of Building Materials", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of Flame Spread Index (FSI) and Smoke Developed (SD).

Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, the test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions.

SAMPLE PREPARATION

The coating system was applied to a 1 inch (25 mm) solid oak substrate (by client) and consisted of 3 sections of material, each approximately 1 inch (25 mm) in thickness by 21 inches (533 mm) in width by 96 inches (2438 mm) in length. The sections were butted together during testing to create the requisite specimen length. Since no specific definition, procedure or criteria are provided in ASTM E 84-12 with regard to determining "constant weight" (as stated in section 6.4), the sample was conditioned at a temperature of 73 ± 5°F (23 ± 3°C) and a relative humidity of 50 ± 5% for a minimum period of 24 hours prior to testing. During testing the sample was self-supporting.

The testing was performed on: 2012-08-29

SUMMARY OF TEST PROCEDURE

The tunnel is preheated to 150 ± 5°F (66 ± 2.8°C), as measured by the floor-embedded thermocouple located 23.25 feet (7087 mm) downstream of the burner ports, and allowed to cool to 105 ± 5°F (40.5 ± 2.8°C), as measured by the floor-embedded thermocouple located 13 feet (3962 mm) from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 24 feet (7315 mm) long, 12 inches (305 mm) above the floor. Three 8 foot (2438 mm) sections of 0.25 inch (6 mm) cement board are then placed on the back side of the sample end-to-end, to protect the tunnel lid, and the lid is then lowered into place.

SUMMARY OF TEST PROCEDURE (continued)

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 1 second. Flame spread distance versus time is plotted, ignoring any flame front recessions. Calculations are based on comparison with flame spread characteristics of select red oak, determined in calibration trials and arbitrarily established as 100. If the area under the curve (A) is less than or equal to 97.5 min·ft, FSI = 0.515·A; if greater, FSI = 4900/(195-A). Smoke Developed is determined by comparing the area under the obscuration curve for the test sample to that of inorganic reinforced cement board and red oak, arbitrarily established as 0 and 100, respectively. Section 5.1.9.1 of ASTM E 84-12 specifies a single combination of lamp and photocell to create the requisite photometer system. It is anticipated that alternative, verified photometer systems will be permitted in future revisions of the test standard. In May 2012, the Exova tunnel was modified to include a specially-designed, modern photometer system that is utilized by many other tunnel systems worldwide. Although an improvement to performance is realized, as of this date the new system is not specifically recognized by ASTM E 84 so this represents a deviation to the stated test protocol.

TEST RESULTS

SAMPLE	Flame Spread Index (FSI)	Smoke Developed (SD)
"FS006 & FS007" Coating	55	150

Observations of Burning Characteristics

- The sample ignited approximately 42 seconds after exposure to the test flame.
- The flame front propagated to a maximum distance of 12.1 feet (3.7 metres) at approximately 3.8 minutes.

Authorities having jurisdiction usually refer to these categories:

	Flame-Spread Index	Smoke Development
Class 1 or A	0 - 25	450 Maximum
Class 2 or B	26 - 75	450 Maximum
Class 3 or C	76 - 200	450 Maximum

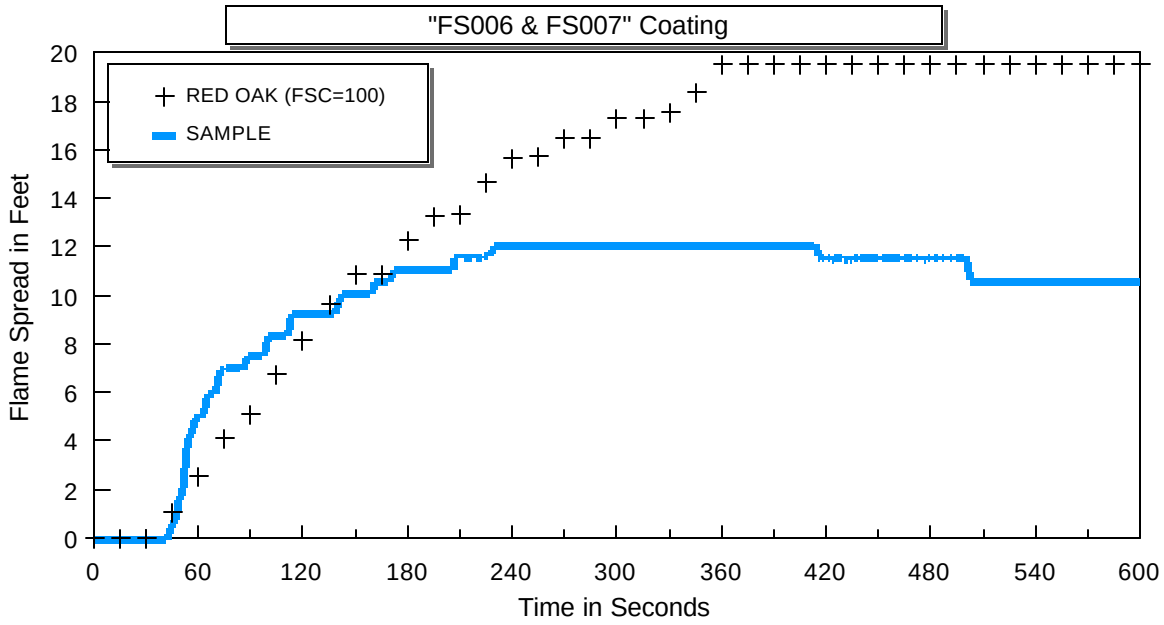
Note: This is an electronic copy of the report. Signatures are on file with the original report.

Francis Williams,
Fire Testing.

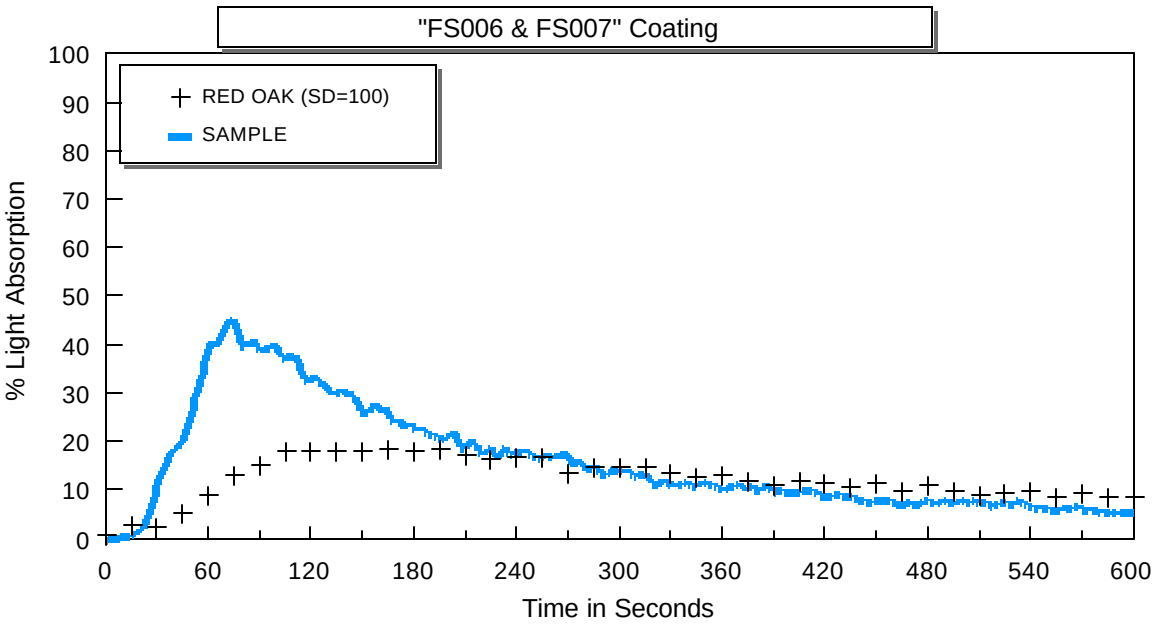
Ian Smith,
Fire Testing.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

FLAME SPREAD INDEX



SMOKE DEVELOPED



Flame Spread Index (FSI)	Smoke Developed (SD)
55	150