Desford 4142

PRODUCT DESCRIPTION

Desford 4142 is a shelf stable, one component (pre-catalyzed) crosslinking polyvinyl acetate emulsion adhesive. It is designed for cold press applications including finger jointing, but can also be used for radio frequency and hot press gluing. With its very fast setting rate, viscosity stability and high percent solids, Desford 4142 can also be used for a variety of assembly gluing applications. It develops a DIN EN 204 D3 water-resistant bond with a clear glue line.

PHYSICAL PROPERTIES

Chemical Family Description: One component crosslinking polyvinyl acetate emulsion adhesive

Appearance: Cream colored liquid

Freeze/Thaw Stable[2]: Yes

Specific Gravity: 1.09

Weight Solids (%): 47.0 - 50.0

Shelf Life: 12 months at 21.1ºC

pH: 2.5 - 3.5

Typical Viscosity (cps): 3,500 - 5,500

Suggested Minimum Use Temperature[3]: 7ºC

APPLICATION GUIDELINES

Moisture Content: Six to eight percent is the recommended moisture content of the gluing stock. High moisture content will slow down glue line cure and cause weaker than normal adhesive bonds. Additionally, panel shrinkage may occur resulting in stress cracks or end delamination.

Stock Preparation: The preparation of the stock to be glued is extremely important. Joints cut from rip saws should be free of saw marks. They should also be straight and square. Moulded or jointed stock should be free of knife marks. Glazed or burnished joints will prevent glue penetration and should be guarded against. When possible, glue joints should be prepared and glued the same day. The stock should be machined on both top and bottom surfaces to allow even contact with radio frequency platens.

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APPLICATION GUIDELINES (Continued)

Edge and Face Gluing

Spread: Generally, 140-245 g/m² of glue line is adequate. Lower adhesive spreads require better stock tolerances and shorter assembly times. Commonly, a mechanical glue spreader is used to apply a uniform spread to the gluing surfaces.

Pressure: Pressure is dependent upon the species or material to be glued and joint preparation. Direct contact of the gluing surfaces must be made to obtain maximum strength. Suggested pressures for various wood densities are: low 7.0-10.5 Kg/cm²; medium 8.8-12.3 Kg/cm²; high 12.3-17.6 Kg/cm². Clamps for edge gluing should be spaced 20-40 cm apart and 5 cm from the end of the panel to evenly distribute pressure along the entire length of the glue line.

RF Cure Time: Radio frequency cure times will vary from machine to machine. Machine manufacturers suggest that machines will cure about 645 cm² of glue line per minute per kilowatt. Glue joints should feel warm immediately after the cure cycle. Cure times should be determined through plant trials.

Finger Jointing

The finger jointing of lumber is increasingly popular as a method of reducing wood waste and providing maximum wood utilization resulting in lower raw material costs. Structural and non-structural finger jointed products have gained wide acceptance throughout the wood industry. The preparation of these joints, as well as the adhesive, play a critical role in the quality of finger jointed products. Most failures of finger jointed lumber are caused by poorly machined and poorly fitted dry joints. The adhesive plays a role in finger joint back off, heat and water resistance.

Equipment Check. Be sure to check overall knife stack for accuracy. Keep cutterheads in pairs and properly cleaned. Cutterheads should be sharpened as a set. Knife set should cut only .3 mm to .8 mm of wood. Knives should be sharpened after running approximately 70 m³ (wood species may cause this to vary). Make sure cutterhead spindle is set vertically with no wear or play in the bearings. Chain carrier lugs should be squared with the trim saws and cutterheads. Make sure trim saws are set true. Check bed rails for wear on a regular basis. Check hold down pressure to provide sufficient pressure to prevent movement of stock while cutting the joint.

Joint Assembly. Pressure should be held constant until joint is cured. End pressure should be set to provide 10-14 Kg/cm² pressure for non-structural joints. Crowder wheels should be aligned to match fingers accurately.

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Adhesive Application. Sufficient adhesive spread will provide a uniform coverage that should cover 1/2-2/3 the length of the finger on both sides in a thin continuous film. Make sure fingers aren't skipped and that the adhesive is applied to the whole joint, not just the tips of the fingers. Excess adhesive squeeze-out can cause arcing in a Radio Frequency tunnel. It also causes adhesive build-up and poor adhesive efficiency. Too much adhesive can cause a hydraulic effect in finger joint back off.

PERFORMANCE PROPERTIES

Meets or exceeds the following industry standards:

- ANSI/HPMA 1994 Type II water resistance
- NWWDA Type I and Type II water resistance
- European Standard DIN EN 204 D3 (formerly DIN 68602 B3)
- European E-1 formaldehyde emission standard

ASTM D-906Block Shear Strength:	**lb/in²**	**wood failure%**
25°C	3,582	38
65°C	1324	00

ASTM D5572 DRY USE Finger Joint Test

	Dry (RT)		Elevated		Soak		Humidity	
	lb/in²	WF(%)	lb/in²	WF(%)	lb/in²	WF(%)	lb/in²	WF(%)
Desford 4142	5817	87	2250	24	4447	65	1550	00
Required	2000	60	1000	NR	1000	30	750	NR

Room Temperature Speed of Set: 0.94 (Moderately)

RELATED PRODUCTS

Desford 4141 is designed for edge-gluing and laminating in cold press, hot press, and radio frequency. Desford 4142 is similar to Desford 4141. However, it may be used under colder plant conditions.

STORAGE AND HANDLING

Shelf Life: 12 months at 20°C. Store in closed containers.

Important Notice to Purchaser: Our recommendations, if any, for use of this product are based on tests believed to be reliable. The greatest care is exercised in the selection of our materials and in our manufacturing operations. However, we make no recommendation to use this product in any manner which conflicts with existing laws and/or patents and WE MAKE NO WARRANTIES, EXPRESS OR IMPLIED, REGARDING THIS PRODUCT OR ITS USE, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, THE MANUFACTURER IS NOT LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES OF ANY KIND. Revised 11/28/13

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