



Technical Data Sheet

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Prefere 4152 with Mixed Application Liquid Hardeners

Prefere 4152 is a medium-viscosity, unfilled, high-resin content urea adhesive

Use

Mixed with a suitable liquid hardener, Prefere 4152 may be used for small assembly applications, bonding decorative laminates, veneering and plywood manufacture. Where a high standard of water resistance is not required, extenders and fillers – with water to adjust viscosity – may be added to the glue mix to reduce costs. This enables glues to be prepared with TS Resins adhesives, which the user may have obtained for a different purpose.

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	Prefere 4152
Appearance	Semi-opaque liquid
Viscosity at 25°C (mPas)	1100 – 1800
SG at 25°C (g/cm³)	1.28 – 1.30
pH	7.0 – 8.5
Solids Content (%)	68 ± 2%

All resin-hardener systems given in this instruction sheet comply with BS 1203 (Type MR), BS 1204: Part 2 (Type MR) and BSEN 12765 Class C3.



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Instructions For Use

Choice of Hardener

Prefere 5332 (Red)
Prefere 5331 (Red)
Prefere 5333 (Green)

This range of hardeners has the following advantages:

- Easy to proportion and mix
- Coloured for ease of identification
- Improved wetting and adhesion
- Ease of washing down
- May be used with continuous mixing equipment, thereby enabling faster setting systems to be used.

Mixture

Resin and hardener are mixed together in the following ratio:

	Parts by weight
Prefere 4152	100
Hardener	10

Mix resin, hardener and, if required, filler. Stir thoroughly until a smooth mix is obtained.

Pot life

See Table 1

Preparation of Materials for Bonding

Surface Preparation

Ensure that the surfaces to be bonded are smooth, clean and free from dust or other deposits. Plywood veneers, lippings etc. should be of uniform thickness. To avoid wetting difficulties that may arise through case-hardening it is good practice to sand plywood before gluing even though it may appear to have been sanded at manufacture.

Moisture Content

For best results with TS Resins adhesives, the moisture content of the surfaces to be bonded should be within the range 7-13%. When pressing at temperatures above 105°C the moisture content should not exceed 10%. Variation between the adjacent surfaces should not be greater than 3% moisture content.



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Application

Application is usually by mechanical spreader, with the actual spread depending on the mix and surfaces to be bonded.

Spread Rates

It is generally adequate to apply the mixture to one of the surfaces only. Using a mechanical spreader, spreads of 100 – 200 grams per square metre are obtainable.

Bonding Pressure

For veneering, or applying thin decorative laminated plastics to particleboard, plywood, etc. pressures of 0.35 – 0.42 MPa are adequate.

Cold and warm pressing

Pressing or clamping times are given in table 2.

Hot Pressing

Hot pressing times are given in table 3.

Heat Penetration

The basic setting times quoted refer to glue-line temperatures only and allowances must be made for the heat to travel from the heat source. Heat penetration time will vary according to density of the wood, moisture content and distance to the farthest glue-line. Table 4 is a guide to the additional time required for low and medium density timbers.

The pressing times apply when bonding absorbent materials such as low and medium density wood. The pressing time must be considerably extended when bonding less absorbent materials.

Quantities Available

Prefere 4152 and the hardeners mentioned are available packed as follows:

Prefere 4152: 25 kg poly drums
250 kg drum
1000 litre IBC
Tanker

Hardeners: 25 kg poly drum



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Storage

Prefere 4152 and hardeners mentioned above, should be stored firmly sealed in their original containers in a cool (ideally not more than 25°C), dry place. Shelf life under these conditions is at least 3 months for Prefere 4152 and at least 12 months for hardeners Prefere 5331, 5332 and 5333.

Table 1 - Pot life

Hardener	15°C	20°C	25°C	30°C	35°C
Prefere 5332	1 - 1½ hr	40 - 50 m	20 - 30 m	20 m	15 m
Prefere 5331	2½ - 3 hr	1½ - 2 hr	¾ - 1 hr	40 m	30 m
Prefere 5333	15 - 20 hr	8 - 10 hr	5 - 7 hr	3 - 4 hr	2 hr

Table 2 - Pressing or clamping times

Basic times in hours.

Hardener	15°C	20°C	25°C
Prefere 5332	2 - 3	1 - 2	½ - 1
Prefere 5331	4 - 5	2 - 3	1 - 1½
Prefere 5333	-	6 - 8	4 - 6

Note Pressing or clamping time quoted is the time required by the adhesive, tested to BS 1204: Part 2, to give a failing load of 300 lbf (1.3 kN) on close joints. If the glue-line is liable to be strained immediately after removal of pressure, the above times should be increased. Dynea glues will continue to gain strength until, after several days, full water-resistant properties are developed.

Table 3 - Hot pressing times

Basic pressing times in minutes (without added filler):

Hardener	40°C	50°C	60°C	70°C	80°C
Prefere 5332	30	18	4	2¼	1½
Prefere 5331	45	25	6½	4	2½
Prefere 5333	---	---	9	4	3¼

Hardener	90°C	100°C	110°C	120°C	130°C	140°C
Prefere 5332	1	¾	½-¾	½	½	¼
Prefere 5331	1½ - 2	1¼	¼-½	½	½	¼
Prefere 5333	2	1½	1	¾	½	¼

High density woods and panel products such as MDF and moisture resistant particleboard may require longer pressing times due to their higher heat capacity and slower rate of water absorption. All pressing times should be used as a guide and not taken as a specification.



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Table 4 - Heat penetration

Distance to the glue line	Heat penetration time in minutes per mm distance to the glue line				
	80°C	90°C	100°C	110°C	120°C
Less than 5 mm	1.2	1.0	0.9	0.8	0.8
5 - 10 mm	1.7	1.4	1.2	1.1	1.0
More than 10 mm	2.0	1.7	1.4	1.3	1.2



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Caution

TS Resins adhesives and hardeners are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming into contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper – non cloth – towels should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in Material Safety Data sheets for the individual product. These are available on request and should be referred to for fuller information.

The suggestions given in these notes are based on data gained from experience and tests. However, since operating conditions in the user's plant is beyond our control, we cannot assume responsibility for any risks or liabilities, which may result from the use of our products.

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