TECHNICAL DATA SHEET

CONSTRUCTION CHEMICALS WOOD WELD STANDARD

POLYURETHANE ADHESIVE

PRODUCT DESCRIPTION

Construction Chemicals Wood Weld Standard is a moisture-curing, single part, polyurethane adhesive, specifically designed for applications in the panel manufacturing and laminating industries, where it is required to bond many types of plastic foams and other insulating materials to a wide variety of both rigid and flexible facing materials. Such composites form structural sandwich panels and insulated building boards and may be used in the manufacture of cold stores, caravans, mobile home and offices, insulated building units etc.

SURFACE PREPARATION

Materials to be bonded should be clean and free from dust, grease and other contaminants. Metals should be stored in a warm environment prior to bonding to avoid chilling of the glue line, which leads to extended cure times.

Most pre-finished metals have backing coats which are well suited to bonding.

Some grades of Aluminium, Galvanised Steel and plastics, however, can be difficult to bond and may require the use of a primer. A test panel should always be prepared when new materials are to be used to establish the adhesive's compatibility.

ADHESIVE APPLICATION

The adhesive is applied by trowel, notched scraper, hand roller, coater or an automatic bead applicator to one surface only of each glue line.

The amount required will vary according to the porosity/smoothness of the substrates and the means of application, but will normally be in the range 80 – 140 grams per square metre.

Once the adhesive has been applied it should be over-misted with water (approximately 5 – 7.5% of water based on the adhesive coating weight is the optimum amount – excessive amounts of water should be avoided).

The panel is then assembled as soon as possible to minimise water evaporation and placed under pressure within the open time of the adhesive. The pressure required will depend to a great extent on the nature of the substrates, but is usually in the range 0.5 to 0.9 bar.

Pressure should be maintained until the adhesive is sufficiently cured to permit handling of the bonded item. Full cure of the adhesive is not obtained for 24 hours and handling within this period should be kept to a minimum.

The open time and cure cycle to permit handling will vary according to:

1. Temperature
2. Weight of adhesive applied
3. Weight of water overmist
4. Method of working
5. Substrates being bonded and should always be determined by experiment.

Temperature ºC	15	17.5	20	22.5	25
Open time minutes*	21	18	16	13	10
Cure time minutes*	50	45	40	32.5	25

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www.constructionchemicals.co.uk

Processing Guide

Weight of adhesive	80 – 140 g/m²	Water overmist	4 – 10.5 g/m²

* measured from when the water overmist is applied.

Various modifications of Construction Chemicals Wood Weld Standard have been developed to accommodate different production requirements; these products have different open and cure times.

The modifications currently available are listed below in order of their speed of cure:

CLEAN DOWN

Construction Chemicals Wood Weld Standard when uncured can be removed with cleaning Solvent 6 or Solvent 9.

Cured product will prove very difficult to remove: however, soaking in Solvent 6 overnight will soften the adhesive.

Nozzles from automatic bead applicators should be immersed in a non-reactive plasticiser when not in use.

STORAGE AND HANDLING

Construction Chemicals Wood Weld Standard is a moisture sensitive adhesive and, left in contact with the open atmosphere, will eventually gel. For this reason, Construction Chemicals Wood Weld Fast Set is protected with a blanket of Nitrogen in the drum prior to despatch, which forms a dry, inert layer on top of the adhesive.

The adhesive under these conditions will have a storage life in excess of three months, provided the containers are stored unopened in a dry place at a temperature between 4ºC and 25ºC.

Once the container has been opened for use and the inert blanket replaced by moist air, the adhesive will have a limited life. To eliminate the moist air reacting with the adhesive, a Nitrogen cylinder can be connected to the small bung hole of the drum, via suitable pressure-reducing valves, to give a positive pressure of 1 – 2 psi.

Alternatively, a desiccator can be connected to the small bung hole of the drum, which will dry the incoming air, replacing the adhesive used. A suitable desiccator with the relevant pipework can be supplied by Construction Chemicals. This will last for approximately 3 months prior to regeneration. Further information is available upon request.

If water enters the drum of adhesive, it will react, giving off carbon dioxide which can cause over-pressurisation of closed cans and drums.

HEALTH AND SAFETY

Construction Chemicals Wood Weld Standard contains Diphenyl Methane Diisocyanate (MDI) which is harmful if inhaled. Use with adequate ventilation and avoid contact with skin and eyes by wearing suitable protective gear.

The vapour pressure of MDI at 20ºC is low and therefore by normal production techniques like roller coating, spreading or beading, very little diisocyanate vapour will be present in the air.

After contact with the skin, wash immediately with soap and water.

After contact with eyes, irrigate with copious amounts of water and seek medical advice.

TECHNICAL DATA

Base	Polyurethane
Solids	100%
Viscosity	4000 ± 500 cps @ 25ºC
Colour	Brown
Tack life	N/A
Coverage	Up to 12.5m² per kg
Cleaner	Solvent 6 or 9
Flash Point	Above 150ºC
Shelf Life	6 months unopened

HEALTH & SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name: WOODWELD STANDARD
Company: Construction Chemicals (UK) Ltd
75 Town Green Street
Rothley
Leicester
LE7 7NW
Tel: 0116 2301955
Fax: 0116 2301944

2. COMPOSITION/INFORMATION OF INGREDIENTS

Ingredient name	Content	Health Class	Risk (R No)
Diphenylmethane-4,4' – Diisocyanate	24-26%	Xn	R36/37/38-42

3. HAZARDS IDENTIFICATION

Irritating to eyes, respiratory system and skin. May cause sensitization by inhilation.

4. FIRST AID MEASURES

Eye contact - Contamination of the eyes must be treated by thorough irrigation with water, with the eyelids held open. A doctor (or eye specialist) should be consulted immediately
Skin contact - Remove mechanically and wash off with plenty of soap and water, carefully apply cream to the clean skin.
Ingestion - DO NOT induce vomiting , seek medical attention. If vapour is inhaled in high concentrations take the person to fresh air and keep warm, let him rest. If there is difficulty in breathing, seek medical attention.

5. FIRE FIGHTING MEASURES

Extinguishing media - Water spray, extinguishing powder, CO2, foam, dry powder. In case of fire, formation of carbon monoxide, nitrogen oxide, isocyanate vapour and traces of hydrogen cyanide is possible.

6. ACCIDENTAL RELEASE MEASURES

Do not empty into drains. Remove mechanically; cover remainder with wet, absorbent material e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx 1 hour transfer to waste container and do not sel (evolution of CO2!). Keep damp in a safe ventilated area for several days.

7. HANDLING AND STORAGE

Keep container tightly closed and dry. Avoid product temperatures above 25ºC and below 5ºC
Ensure adequate ventilation or exhaust ventilation in the working area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

	STD	Long term exposure	Short term exposure
Disphenylmethane-4,4'-diisocyanate	MEL	0.02mg/m3	0.07mg/m3

Wear suitable protective clothing, protective gloves (made of PVC or rubber) and protective goggles/mask. Respiratory protection required in insufficiently ventilated working areas. A air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.
In case of hypersensitivity of the respiratory tract (eg astmatics and those who suffer from chronic bronchitis) it is advisable to work with the product.
Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work. Keep working clothes separate. Take off immediately all contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown
Odour: Earthy, musty
PH: N/A
Flashpoint (ºC): Above 200ºC
Flammability: Non flammable liquid
Auto ignition temperature : above 400ºC

Oxidising properties:	N/A
Viscosity at 25ºC:	400 cP Approx
Vapour pressure:	Below 0.001 hPa @ 25ºC
Relative density @ 20ºC:	1.12 g/cm3
Solubility in water:	Insoluble - reacts

10. STABILITY AND REACTIVITY

Thermal decomposition	Polymerizes at above 260ºC with evolution of CO_2.
Hazardous decomposition products	No hazardous decomposition products when stored and handled correctly.
Hazardous reactions:	Exothermic reaction with amines, alcohols, acids and alkili. Reacts with water forming CO_2. Closed containers may rupture owing to increase of pressure.
Further information	Open pressurized containers carefully to release pressure.

11. TOXICOLOGICAL INFORMATION

LD50 oral (rats)	Above 15000mg/kg
LC50 Inhalation (rats)	1 370 mg as aeorsol / m3, 4 h of exposure
Effects of exposure	
Eyes	Strong irritation, lachrymation, burning
Skin	Dehydration, possible sensitisation

Special properties/effects Respiratory system (vapour in high concentration) – Irritation of the Mucous membranes in the nose, throat and lungs, dryness of the throat, pressure on the chest, sometimes accompanied by breathing Difficulties and headaches. Delayed appearance of the symptoms and allergic reaction in susceptible persons possible.

12. ECOLOGICAL INFORMATION

Do not allow to escape into waters; wastewater or soil. The product reacts with water at the interface forming CO_2, and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (eg detergents) or by water soluble solvents.

13. DISPOSAL RECOMMENDATIONS

Waste Disposal	Disposal of the wet adhesive is governed by the Control of Pollution (Special Wastes) Regulations 1980. Non-recoverable waste should be disposed of via a licensed waste disposal contractor.

14. TRANSPORT INFORMATION

UN No:	2810
Packaging Group	III
CDG/CPL	Label for Conveyance Contains 4,4' Diphenylmethane diisocyanate
Imco Class	6.1

15. REGULATORY INFORMATION

CHIP Regulation	9
Label for supply	Harmful – contains 4,4' Diphenylmethane diisocyanate
Classification	Xn
CHIP Risk Phrase	R36/37/38 Irritating to eyes, respiratory system and skin
	R42 May cause sensitization by inhalation
	S26 In case of contact with eyes, rinse immediately with plenty of water
	S38 In case of insufficient ventilation, wear suitable respiratory equipment
	S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible

16. OTHER INFORMATION

The data contained in this Safety Data Sheet has been supplied as required by the Chemicals (Hazard Identification and Packaging) Regulations 1993, as amended, for the purpose of protecting the health and safety of industrial and commercial users who are deemed capable of understanding and acting on the information provided.