SPECIFICATION INFORMATION

NBB Recycled Furniture **Duraplas**

RECYCLED PLASTIC PROFILES

Description

Duraplas is a high quality extruded plastic profile manufactured from recycled high density polyethylene (HDPE) plastic. The recycled HDPE plastic shall be reprocessed to form an homogenous section of blown HDPE which is extruded through a die, cooled and cut in a single process. Due to this specialised manufacturing process, Duraplas is available in various colours and finishes.

Duraplas HDPE plastic profiles may be used to construct highly durable and weather resistant products which will exhibit the following benefits:

- Long life expectancy
- Maintenance free
- Non absorbent
- Slip resistant
- Non leaching
- Will not rot
- Non sparking
- Highly resistant to impact and wear
- Unsupportive of organic growth
- Easily cut, machined, drilled and fixed

Applications

Duraplas may be used widely across industry sectors, but typical applications include:

Boardwalks

Fencing

Outdoor furniture

Waters-edge structures

Other uses include: decking, retaining structures and revetments, plus agricultural and equestrian applications

Duraplas options

X-Section	Colours	Finish Options	Length Options
18 x 140mm 24 x 140mm 24 x 140mm T&G 38 x 140mm 38 x 90mm 90 x 90mm 60 x 60mm	Black Dark Brown Mid Brown Green Blue Mid Red Bright Red Yellow	Smooth Textured Roughened	Up to 5000mm

Note: Products are manufactured to order. Contact Centriforce for lead time information.

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

SPECIFICATION INFORMATION

NBB Recycled Furniture

Duraplas
RECYCLED PLASTIC PROFILES

Product performance specification

(Technical data is given as guidance only)

Property	Material type	Value	Units	Test method
Compressive Strength (ultimate)	Material	46.0	MPa	BS EN ISO 604:2003
Compressive Modulus	Material	1.2	GPa	BS EN ISO 604:2003
Tensile Strength	Material	11.1	MPa	BS EN ISO 527:1996
Tensile Modulus	Material	950.9	MPa	BS EN ISO 527:1996
Flexural Strength (23°C)	Material	19.9	MPa	BS EN ISO 178:2010
Flexural Modulus	Material	680	MPa	BS EN ISO 178:2010
Thermal Expansion	Product	1.8	mm/m/10°C	BS EN ISO 12856
Impact Resistance (Charpy Notched)	Material	12.1	kJ/m^2	BS EN ISO 179-1
Water Absorption	Product	0.2	Wt%	BS EN ISO 62:1999
Density	Product	0.7 typical	g/cm^3	BS EN ISO 1183-1:2004
Screw Pull Out	Product	4.2	kN	BS EN ISO 1383:1999
Bolt Pull Out	Product	>28	kN	BS EN ISO 527:1996
Slip Resistance	Dry	90	(Low slip risk)	BS 7976-2
Slip Resistance	Wet	58	(Low slip risk)	BS 7976-2

Test results have been obtained using a typical production sample tested at an independent test laboratory. Please note that recycled plastics are, by their nature, variable. The values shown above should be regarded as indicative of the material.

Generic chemical resistance chart

Duraplas is manufactured from recycled HDPE polymer which has excellent chemical resistance to a wide range of everyday chemicals and cleaning agents at ambient temperature.

Materials	Resistance to chemical attack		Comments
	20°C	60°C	
Water	Good	Good	
Sea water	Good	Good	
Common Detergents (liquid)	Good	Good	
Sodium Chloride (common salt)	Good	Good	
Diesel oil	Good	Limited	Tests refer to 'full immersion'
Petrol (gasoline)	Limited	Not satisfactory	Tests refer to 'full immersion'
Alcohol (40% ethanol)	Good	Limited	Tests refer to 'full immersion'
Alkalis and acids	Good	-	Contact Centriforce for further information

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

PRODUCT DATA

NBB Recycled Furniture **Duraplas**

RECYCLED PLASTIC PROFILES

Handling and storage

Duraplas is delivered to site in pre-wrapped packs equivalent in length to the longest item within the consignment. The profiles are wrapped in thin polyethylene film and banded with polyester straps. Skids are incorporated into the packaging to aid the use of mechanical handling with apparatus such as fork-lifts and lifting booms with slings.

Duraplas should be stored in its original packaging on a flat, solid and free draining storage area until ready for use. It is not recommended to store Duraplas more than two packs high. Packs should not be un-banded unless safely positioned at ground level.

Maintenance

Duraplas requires no planned, preventative maintenance when in service.

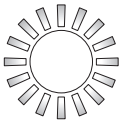
Cleaning of Duraplas may be achieved with a standard power washer if adequate drainage exists. In the absence of adequate drainage, warm water and a lint free cloth or sponge may be used to clean the product.

Duraplas is fully recyclable at the end of service.

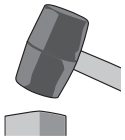
Installation

These general rules for installation are offered for guidance purposes only, however further details are available in the Duraplas 'Fixing Instructions' document [Ref: FI1 10/12]. Generic Risk Assessments and Method Statements, for specific applications, are also available upon request.

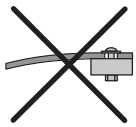
Always store Duraplas in a level and flat condition



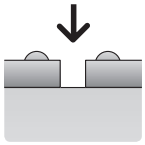
Duraplas should be acclimatised to the ambient conditions and installed close to the ambient conditions anticipated during service



Components driven into the ground may be installed by manual or mechanical percussive means

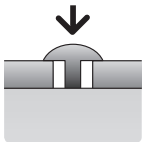


Duraplas should not be left unsupported for any prolonged period

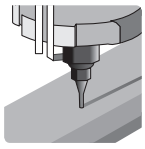


Always allow for expansion and contraction at butt joints

Fixings should be installed into pre-drilled holes. Fixings should be appropriate to the specific site conditions



Holes for fixings should be oversized to allow for movement in simply supported members



Duraplas may be cut, drilled and machined using tools suitable for working with timber

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

PRODUCT DATA

NBB Recycled Furniture

Duraplas
RECYCLED PLASTIC PROFILES

Manufacturing tolerances

Duraplas is a high quality extruded plastic profile manufactured from recycled HDPE plastic. The recycled HDPE plastic is extruded through a die, cooled and cut in a single process. This process may be influenced by external factors and, as such, the following manufacturing tolerances are allowable:

Size	Thickness	Maximum allowable	as specified +2mm
		Minimum allowable	as specified – 4mm or 10% whichever is least
	Width	Maximum allowable	as specified +1mm
		Minimum allowable	as specified - 4mm
	Length	Maximum allowable	as specified +30mm
		Minimum allowable	as specified - 0mm
Straightness	Deflection	Maximum allowable	<3.5mm per linear metre
		from Machine direction line which results in bowing or warping	

Variability

The performance of products manufactured from recycled material is susceptible to variability from the feedstock, therefore the published technical data is offered for guidance purposes only. The data has been obtained from extracting random test samples from the production process and subjecting those samples to industry standard test regimes performed by a reputable, independent test house. Variability within the feedstock may also impact upon finish and colour uniformity.

Fire conductivity

Duraplas is difficult to ignite, however, should the installation be involved in a developed fire the spread of flame is commensurate with class 3 materials in accordance with BS 476-7 1997. Duraplas may be extinguished by employing any available fire extinguisher.

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

FIXING INSTRUCTIONS

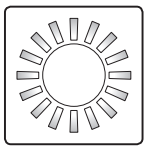
NBB Recycled Furniture **Duraplas**
RECYCLED PLASTIC PROFILES

General considerations

Duraplas is manufactured from post consumer and post industrial recycled high density polyethylene (HDPE) plastic.

Due to the recycled nature of the source material, it is possible that there will be variability in product performance, finish and colour uniformity. However, the degree of variability is controlled by a ISO9001 Quality Assurance scheme.

As with most construction materials, it is recommended to identify the most appropriate face to be placed outermost when selecting Duraplas from the delivered pack



All plastics are susceptible to thermal expansion and contraction associated with temperature change. Allowances for thermal movement should be incorporated into the design and construction of structures using Duraplas to prevent warping and buckling.

Allowances within the structure for thermal movement are recommended as follows:

Ambient Temp °C	Potential for Expansion per lm	Potential for Contraction per lm
-10	+9mm	0mm
-5	+8mm	-1mm
0	+7mm	-2mm
+5	+6mm	-3mm
+10	+5mm	-4mm
+15	+4mm	-5mm
+20	+3mm	-6mm
+25	+2mm	-7mm
+30	+1mm	-8mm
+35	0mm	-9mm

The above table assumes the following:

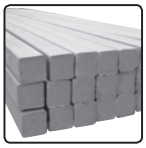
- Service Temperature Range of -10°C to +35°C
- Thermal Expansion and Contraction of 2.0mm / lm / 10°C
- Product is conditioned to ambient temperature prior to installation

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

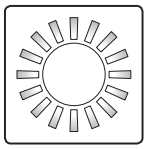
FIXING INSTRUCTIONS

NBB Recycled Furniture **Duraplas**
RECYCLED PLASTIC PROFILES

Product conditioning

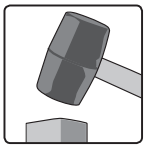


Always store Duraplas in a level and flat condition



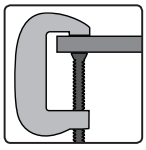
Duraplas should be acclimatised to the ambient conditions and installed close to the ambient conditions anticipated during service

Product placement

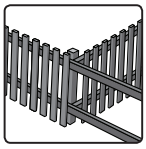


Duraplas may be driven into the ground by manual or mechanical percussive means

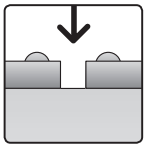
Duraplas should not be left unsupported for any prolonged period



Duraplas may be clamped to provide temporary support

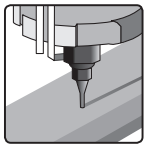


The final structure should be substantially self supporting with minimal overhang or projection of unsupported components



Always consider thermal expansion and contraction at nodes and joints

Product machining



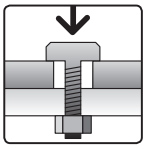
Duraplas may be cut, drilled and machined using tools suitable for working with timber

Where power tools are to be used, slower speeds are recommended to reduce the potential for heat build-up and any subsequent melting of the plastic

Product jointing and fixing

Simply supported members

• Cladding • Fencing rails



Fixings should be appropriate to site conditions

Fixings should be installed into pre-drilled and oversized or slotted holes

Use coach bolts, coach screws and pan head screws with large washers wherever possible

Avoid use of countersunk screws wherever possible

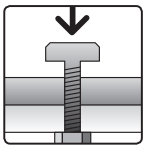
Do not use nails

Complex or pin-pointed structures

• Boardwalks • Platforms

Fixings should be appropriate to site conditions

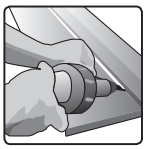
Duraplas structural frames, which offer inherent restraint and resistance to flex, may be fixed with bolts through standard size holes



Duraplas profiles, such as deckboards, may be fixed to Duraplas structural frames with directly driven, countersunk screws

Constraints, such as profile length and structural capability, must be considered before this method of fixing is selected

Product bonding and welding



Bonding of Duraplas is possible in certain conditions

Welding of Duraplas is possible in certain conditions

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

PRODUCT INFORMATION

NBB Recycled Furniture **Duraplas**
RECYCLED PLASTIC PROFILES

Composition and information on ingredients

Description:

Polymer with encapsulated pigments and blowing agent.

Polymer:

HD polyethylene.

Pigments:

Max 4% polyethylene encapsulating high concentrations of pigments in granular form.

Additives:

Max 1% blowing agent

Hazard identification

Low hazard in normal temperatures. Material will start to create fumes at temperatures in excess of 270°C.

First aid measures

Inhalation:

In case of adverse exposure to fumes formed at temperatures in excess of 270°C, remove casualty to fresh air and monitor for adverse health effects.

Skin contact:

Skin contact will not give rise to first aid other than cuts and abrasions due to poor manual handling techniques.

Eye contact:

In its finished form the product should not give rise for concern, however swarf and chippings may present themselves whilst cutting.

PPE may be required at this point. In the event of swarf or chippings entering eye, remove as foreign object.

Ingestion:

First aid not normally required.

Fire fighting measures

Mode of extinguishing - Attack fire using $C0_2$, or Dry powder.

Fire may re-start if burning material is not sufficiently cooled. Fumes may occur with decomposition.

Accidental release measures

Not applicable.

Handling and storage

Handle materials using recognised manual handling techniques.

Store materials away from sources of ignition and away from walkways as loose sheet may form a trip hazard.

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF

PRODUCT INFORMATION

NBB Recycled Furniture Duraplas
RECYCLED PLASTIC PROFILES

Exposure controls and personal protection

No exposure control required under normal conditions.

Hand protection recommended when manually handling materials.

Other personal protection associated with the application (Example: eye protection when cutting).

Physical and chemical properties

Physical state:

Hollow or Solid.

Form/colour:

Products of varying colours.

Odour:

None.

Melting point:

Excess of 120°C.

Relative density:

0.65 - 0.95 nominally.

Solubility in water:

Insoluble.

Stability and reactivity

This product is stable in its finished state at normal temperatures.

Toxicological information

Inhalation:

No hazard at ambient temperatures.

Fumes will develop at temperatures in excess of 270°C, which could affect the eyes and respiratory tract.

Skin contact:

No hazard at ambient temperatures.

Could cause thermal burns at temperatures in excess of 150°C.

Eye contact:

No hazard in its finished form.

Swarf particulate created when cutting or drilling.

Ingestion:

None.

Ecological information

Material can be 100% recycled.

Disposal considerations

Recycle as PE waste material.

Transport information

Not classified as dangerous material.

Regulatory information

None known.

Other information

NA

Phone: 0800 1777 052 Fax: 0800 1777 053
Email: sales@recycledfurniture.co.uk • Web: www.recycledfurniture.co.uk
NBB Recycled Furniture, Unit 5, 145 Sterte Road, Poole, Dorset, BH15 2AF