



Corus Strip Products UK

The one and only Durbar

Patterned steel floor plate

Durbar
Only by Corus

There is patterned steel floor plate and there is Durbar. If you want the one that has been tested for spanning properties and slip-resistance, then you want Durbar—available only from Corus.

Unique set of benefits

Durbar is hot-rolled structural steel floor plate that has an evenly distributed, raised pattern which is integral to the product.

If you specify Durbar by Corus, you get a unique set of benefits from the only manufacturer of Durbar.

- **A structurally integral component with a distinctive appearance**
- **A slip-resistant surface**
- **Easy-to-clean, self-draining surface**
- **An economic and competitive solution**
- **Standard sizes from stock in the UK and Ireland**
- **Compliance with the Construction Products Directive**
- **World-class technical support**
- **Processing services from a network of distributors**
- **The true pattern for matching existing Durbar installations**

Typical applications

- Stairs and walkways
- Bridges
- Steps and safety platforms on mechanical handling equipment and machinery
- Commercial vehicles
- Containers
- Lifts
- Shipbuilding
- Offshore installations
- Cladding and protective barriers

Front cover: Approximately life-sized photograph of Durbar taken in studio conditions.

Right: Durbar stairs.

Far right: The roll that produces Durbar has over 6000 perfectly machined indentations.



Only with Durbar



Structural integrity

Durbar is a structural component and can be used as an integral part of structural performance.

This structural integrity gives Durbar an important advantage over some other materials.

Young's modulus, which determines stiffness and hence deflection in metals, shows the measure of this advantage. For example, the Young's modulus of aluminium alloys is typically 40MPa compared with 200MPa for structural steels. Aluminium would therefore need to be well supported whereas Durbar contributes to structural performance.

As well as structural integrity, Durbar offers a distinctive pattern that can add architectural interest to buildings and other structures.

Slip resistance

Durbar has been tested and assessed for slip potential. Its pattern of studs creates a slip-resistant surface at all angles and allows plates to be used in any direction.

See *Tested for slip resistance* on page 7.

Self-draining surface

The spaces between the studs create a self-draining surface, which is easy to clean, reduces corrosion and gives Durbar a long life.

Economic and competitive

Durbar is an economic and competitive solution for flooring and other applications. Its structural properties reduce cost by eliminating the need for separate structural and flooring components. Distributors of Durbar can offer cost-saving processing services.

Durbar again and again

Durbar has characteristics that help reduce its impact on the environment.

It is stronger than ordinary mild steels and therefore less of it is necessary to perform a structural role. Materials with lower strength than Durbar will require additional support.

The durability of Durbar means that it lasts a very long time and can also be used to refurbish existing structures or used again if it is dismantled. At the end of its useful life, Durbar is 100% recyclable without loss of strength or durability.

Structural steels have an excellent record in the UK for recycling and reuse, with an average of 94% recycled or reused¹.

Use Durbar—again and again.

¹ James Ley, *An environmental and material flow analysis of the UK steel construction sector*, Doctor of Engineering thesis, University of Wales, 2003.



Readily available

Corus is committed to prompt and reliable delivery. The business supplies S275JR+AR direct from stock to its extensive network of processors and distributors in the UK and Ireland. This means that Durbar users can be assured of ready availability and prompt delivery for this most commonly specified grade. Specifications not held in stock are available by agreement.

Corus quality

The plant that manufactures Durbar is certified to ISO TS 16949 : 2002 by Lloyd's Register Quality Assurance Limited and meets the requirements of the Construction Products Directive. Over 35 years of experience manufacturing Durbar has developed a high-quality product. The roll that produces Durbar has over 6000 perfectly machined indentations. The product is produced and supplied through a well-established supply chain with a constant eye to quality.

Advice and support

Corus offers world-class technical and design services. The business can help customers select the appropriate grade, calculate safe working loads and deflections and obtain the best results from Durbar.



Above: Wicksteed Leisure Limited, t/a Wicksteed Playscapes, Kettering, Northants.

Left (both): Stair components show Durbar's fabricating capabilities. Kwik-Step Limited, Bristol.

Characteristics of Durbar

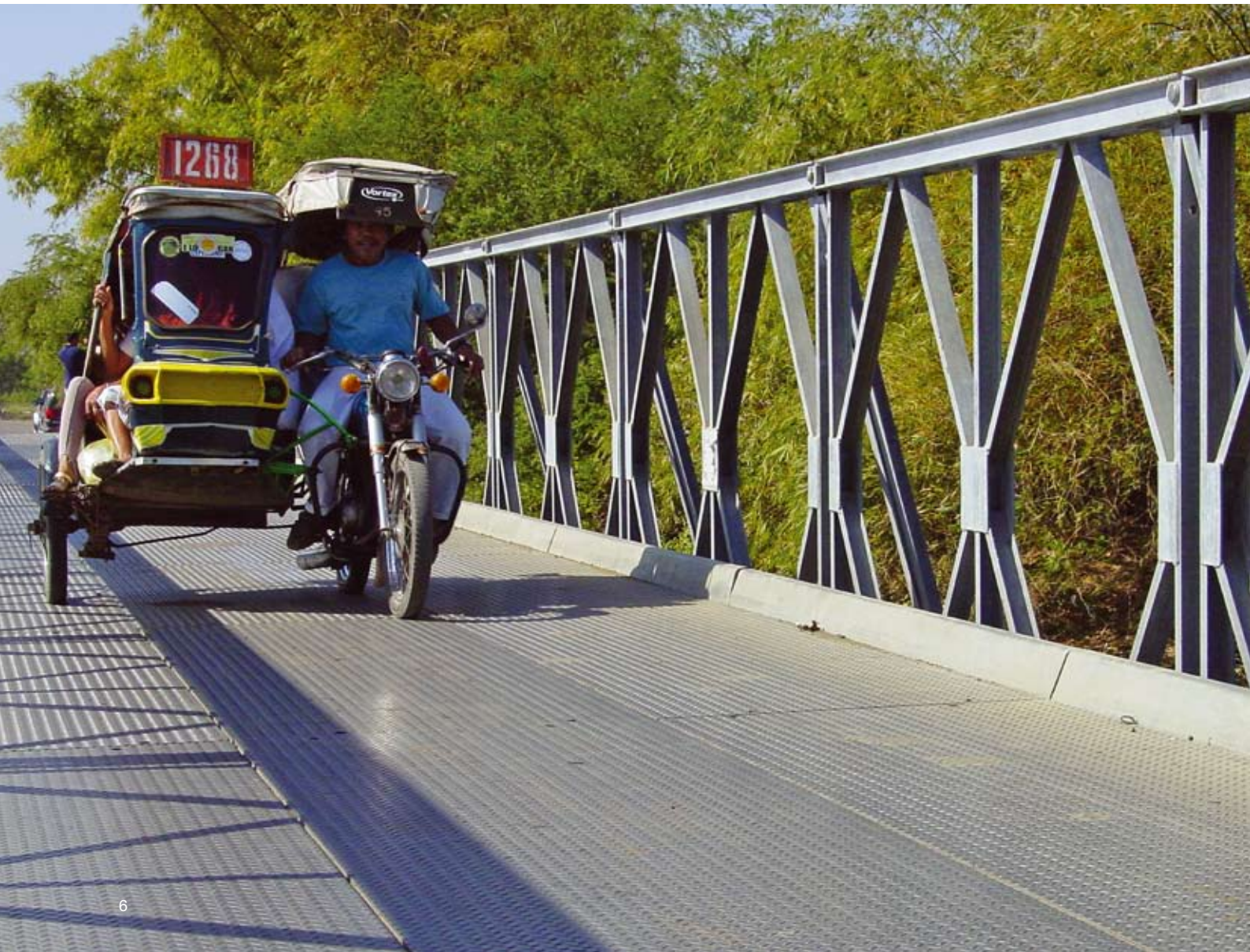
Working with Durbar

The strength, robustness and stiffness achieved from using Durbar are equivalent to steel plate of the same nominal thickness.

Durbar can be readily welded by normal processes and can also be cut and bent. Distributors and processors offer fabricating services nationwide.

Durbar can be used uncoated, it can be galvanised for enhanced corrosion resistance or it can be treated with various paints and coatings for aesthetic reasons.

Advice on working with Durbar is available from Corus (see *Enquiries* on page 10). Users should also visit www.corusdurbar.com.



Heat resistance

When subjected to extreme heat, Durbar also has distinct advantages over some other flooring materials.

Aluminium, for example, has a lower specific heat capacity than steel, which means it heats up faster. And because heat reduces the effective Young's modulus of all metals, Durbar, with its significantly higher Young's modulus, will perform better than aluminium in these conditions.

In extreme heat, the structural properties of aluminium will fail more rapidly than those of steel. At temperatures where aluminium alloys have begun to melt, Durbar steel floor plate will still be supporting design loads.

At 500°C, aluminium alloys used for floor plate have lost all of their strength, whereas Durbar plate still retains more than two-thirds of its ambient temperature capacity.

Hot-rolled structural steel regains all of its strength if cooled down to ambient temperature from 500°C and therefore continues to perform at that strength.

Tested for slip resistance

Wessex Test Equipment Limited, an independent research establishment, tested Durbar both wet (clean water) and dry in accordance with the standard and guidelines shown below and assessed its potential for slip as *extremely low* for the dry samples and *low* for the wet samples.

Testing was conducted on uncoated Durbar under laboratory conditions. The actual slip-resistance of Durbar will depend upon the real-life application and the environment in which it is used. Galvanising, painting or coating Durbar can influence its slip resistance.

Specific information about the test is available from Corus (see *Enquiries* on page 10) and is also on our web site at www.corusdurbar.com.

BS 7976-2: 2002 Pendulum Testers scope for use in the determination of slip/skid resistance of surfaces.

UK Slip Resistance Group Guidelines (UKSRG) – The Assessment of Floor Slip Resistance – issue 3 Nov 2005.

Only for Durbar

The properties of Durbar, including slip resistance and load span, are based upon Durbar and must not be used for designing or fabricating in other patterned steel plates since they cannot be relied upon to perform in the same way as Durbar.



Left: Bridge in the Philippines, Mabey & Johnson Limited, Twyford, Reading, Berks.

Above: Wicksteed Leisure Limited, t/a Wicksteed Playscapes, Kettering, Northants.

Product range and properties

Standards and grades

Durbar is available to EN 10025-2 : 2004 in grades S275JR+AR and S355JR+AR.

Ask Corus about the availability of other grades.

To obtain the best possible results from Durbar, please consult Corus about the processing and fabricating characteristics of Durbar, e.g. bending and galvanising, before you order.

Mechanical properties

The mechanical properties of Durbar comply with EN 10025-2 : 2004 and are shown in table 1. The values shown for strength and elongation in table 1 are for test pieces taken transverse to the rolling direction; those for the impact test are for test pieces taken in the rolling direction.

Chemical composition

The chemical composition of Durbar complies with EN 10025-2 : 2004 and is shown in table 2.

Dimensions

Durbar S275JR+AR is manufactured in standard sizes.

Standard thicknesses and widths are shown in table 3. Other combinations of thickness and width will be considered, based upon the volume required.

Standard lengths are twice the widths shown in table 3, e.g. the length of 1000mm wide Durbar is 2000mm. Non-standard cut lengths from 700mm to 10,000mm are available by agreement.

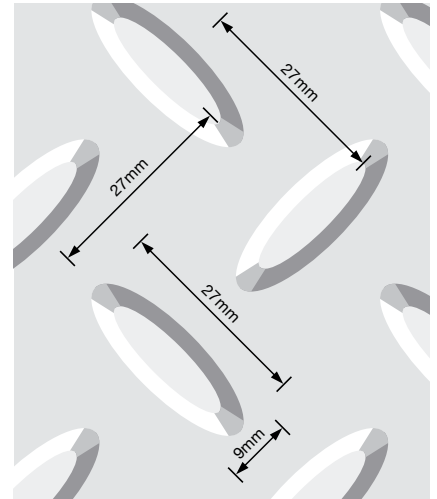
Please consult Corus about the dimensional range for S355JR+AR.

Distributors of Durbar also offer standard and non-standard sized plates and can also process material to suit the needs of users.

The thickness of Durbar is that of the plain plate, exclusive of the raised pattern. The studs in the pattern are typically between 1.5mm and 2.2mm.

Weight

Weight per unit area is shown in table 4.



The dimensions in the picture above are approximate.

Load span data

Load span information can be viewed and downloaded at www.corusdurbar.com.

Health and safety

The product health and safety information for Durbar is available at www.corusdurbar.com.



Left: Mabey & Johnson Limited, Twyford, Reading, Berks.

Mechanical properties**1**

Grade	R _{eL} (N/mm ²)	R _m (N/mm ²)	A (%)	Impact test	
	Min	Min-max	Min	Temp °C	Min energy J
			$L_0 = 5.65\sqrt{S_0}$ $3 \leq t \leq 12.5$		
S275JR+AR	275	410-560	21	20	27
S355JR+AR	355	470-630	20	20	27

Notes:

1. Material thickness, t, is in millimetres.
2. Impact properties of quality JR products are verified only when specified at the time of the enquiry and order.
3. Impact strengths apply to thicknesses ≥ 6 mm and are for standard test pieces only.

Chemical composition**2**

Grade	C	Mn	P	S	Si	N
	Max	Max	Max	Max	Max	Max
S275JR+AR	0.21	1.50	0.035	0.035	–	0.012
S355JR+AR	0.24	1.60	0.035	0.035	0.55	0.012

Note: Values are in weight percentages.**Dimensions: S275JR+AR****3**

Standard thickness	Standard widths
3.00	1000/1250
4.50	1000/1250/1500
6.00	1000/1250/1500
8.00	1000/1250/1500
10.00	1000/1250/1500
12.50	1000/1250/1500

Notes:

1. Standard cut lengths are twice the widths shown, e.g. the length of 1000mm wide Durbar is 2000mm.
2. Dimensions are in millimetres.

Weight per unit area**4**

Thickness (mm)	Weight (kg/m ²)
	All grades
3.00	27
4.50	39
6.00	50
8.00	66
10.00	82
12.50	101

Note: These are typical weights; actual weights will vary owing to stud height and positive width tolerances.

Enquiries

Sales

T +44 (0)121 585 5522
F +44 (0)121 609 5050
durbar@corusgroup.com

Durbar technical enquiries

Advice about the product range and fabricating Durbar:

T +44 (0)1633 755171
F +44 (0)1633 755064
strip.enquiries@corusgroup.com

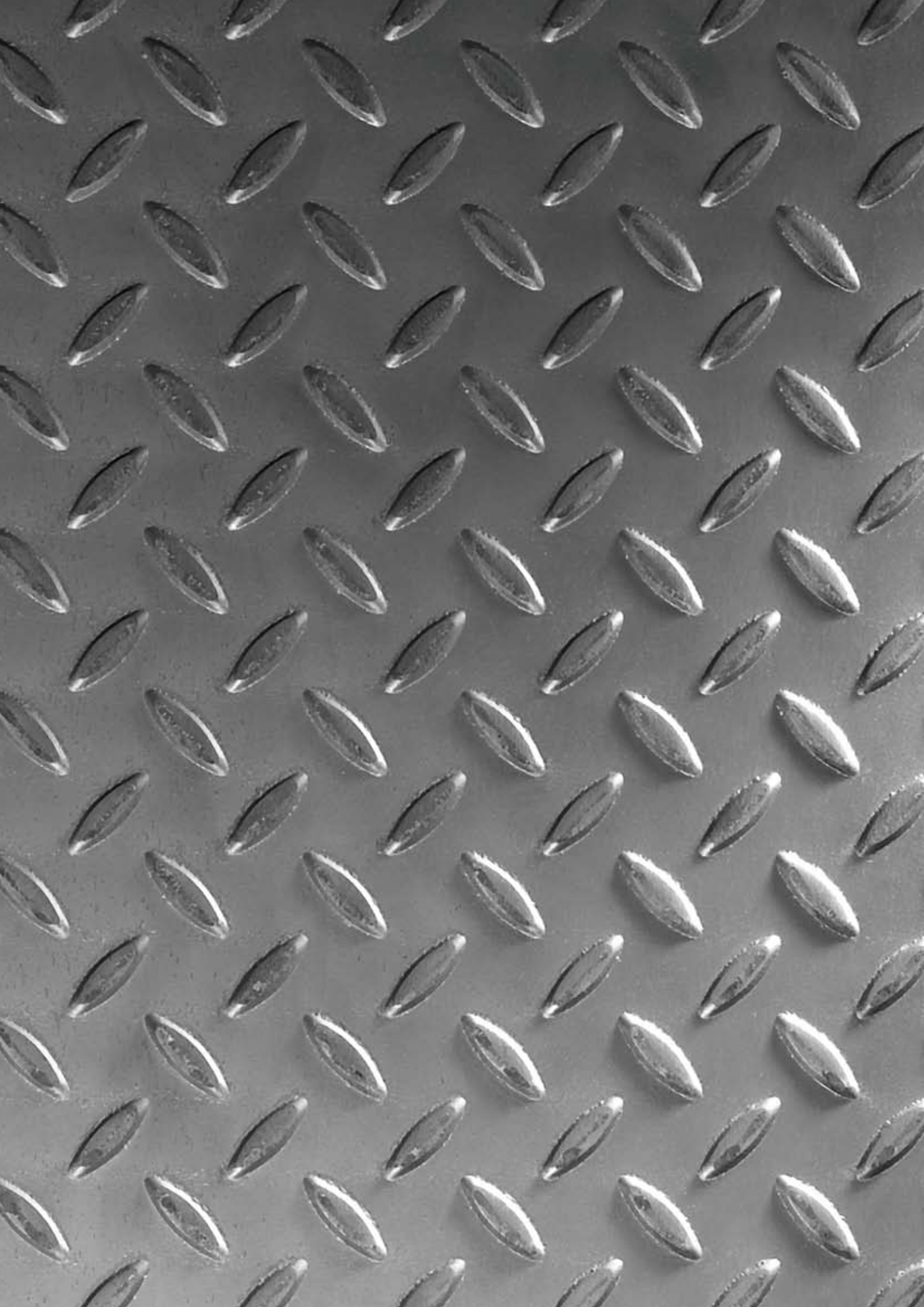
Durbar on the web

Visit www.corusdurbar.com for more information about Durbar.

Durbar in construction

Advice about using Corus products in construction:

Corus Construction Services and Development
T: +44 (0)1724 405060
www.corusconstruction.com



www.corusgroup.com

Durbar is a trademark of Corus UK Limited.

Care has been taken to ensure that this information is accurate, but Tata Steel UK Limited, including its subsidiaries, does not accept responsibility or liability for errors or information which is found to be misleading.

This information is given for guidance only and does not form part of any warranty. Customers should make their own assessment of the suitability of this product for the purpose.

Corus Strip Products UK reserves the right to change this information at any time without prior notice. The online version will take precedence over the printed version at any moment in time.

Copyright 2008 Corus UK Limited

Corus cares about the environment. This brochure is printed with biodegradable vegetable inks and using material with at least 80% recycled content.

Design: ELEVATOR www.elevatordesign.co.uk

Corus Strip Products UK

PO Box 10

Newport

South Wales

NP19 4XN

UK

T: +44 (0) 1633 290022

F: +44 (0) 1633 755104

cspuk.marketing@corusgroup.com

www.corusgroup.com/stripproductsuk