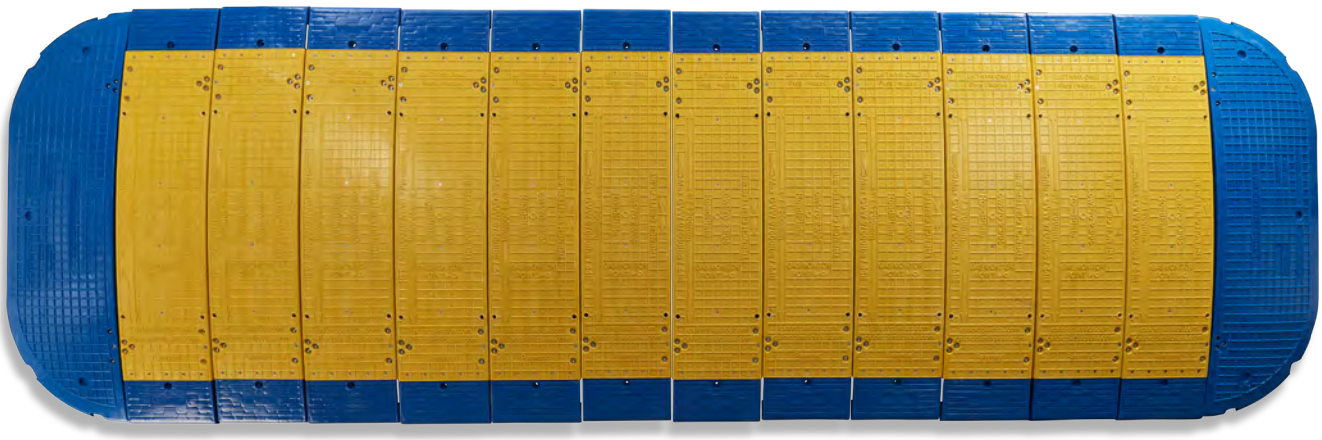
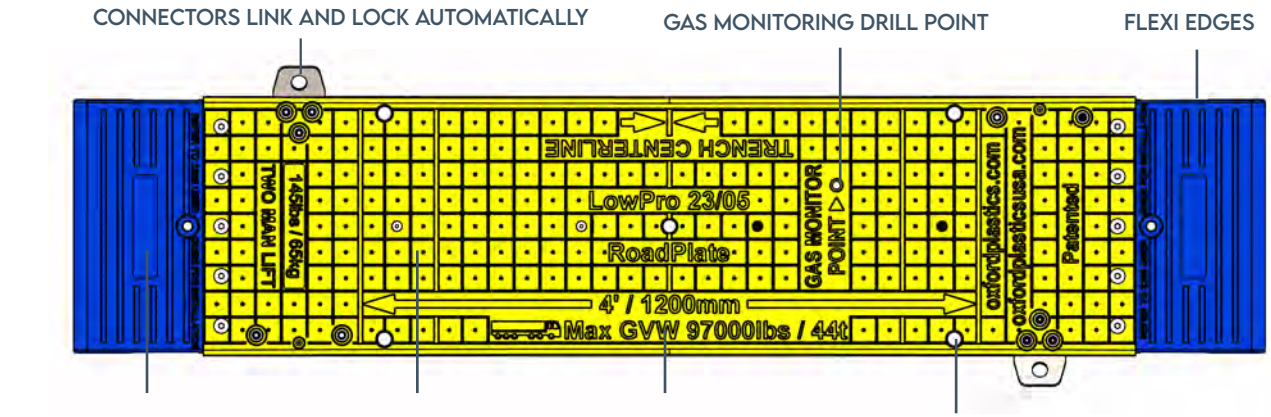
LOWPRO 23/05 ROAD PLATE



CONTENTS

FEATURES



ROBUST AND SAFE

Advanced composite technology construction, robust and durable.

Integral Slip resistant texture.

Inclined rubberised 'Flexi Edges' prevent damage to road and reduce impact on vehicles. No need to 'cold patch'.

Proven to work in ambient temperatures of +50c to -30c.

Non-metal construction reduces theft.

QUICK INSTALLATION

Can be manually handled without the need for heavy lifting equipment.

Quick to Install, with In-built linking and locking system, no need to bolt all items together.

Drop Pins are automatically deployed underneath to prevent movement on trenches, without the need to bolt every unit.

All parts replaceable.

EXTRAS

Supplied with EasiLift Handles to aid manual handling.

Stillages can be supplied for transit and storage.

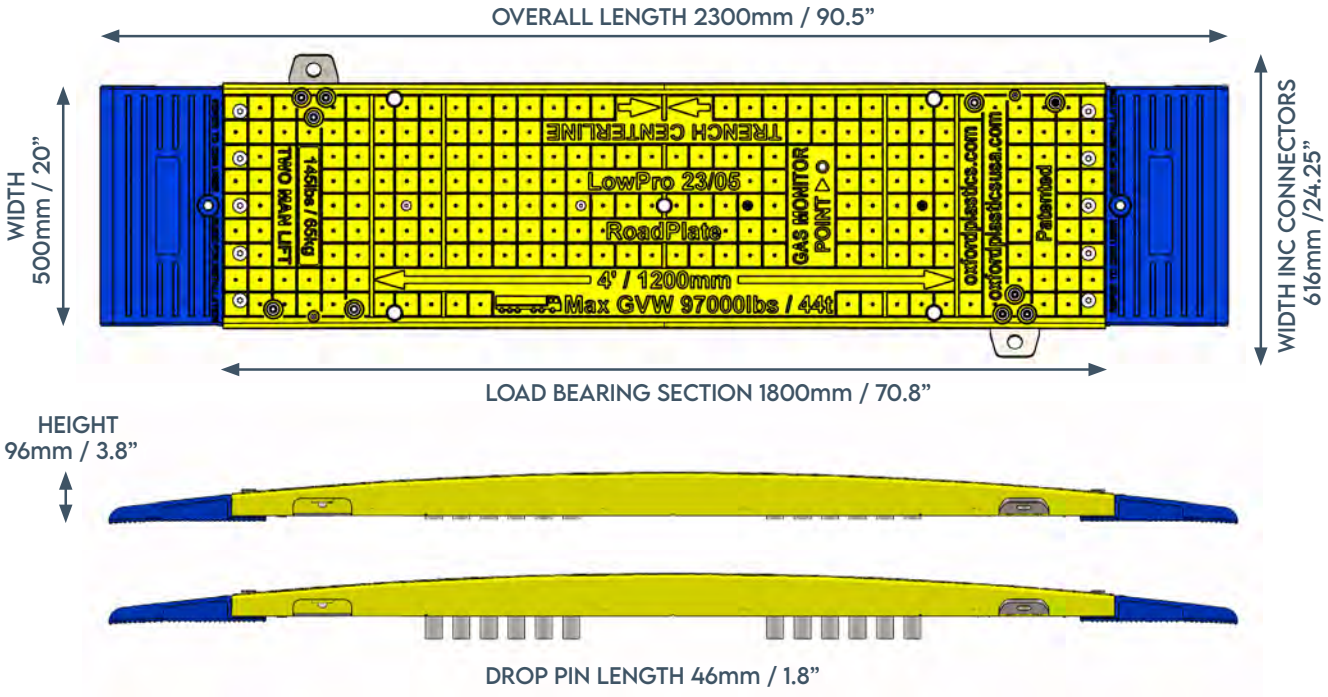
Gas Monitoring point allows gas measurements to be taken without removing the Road Plate

Flexi Ends can be customised with Customer Logos. MOQ 40 off for inner, 20 off for outer.

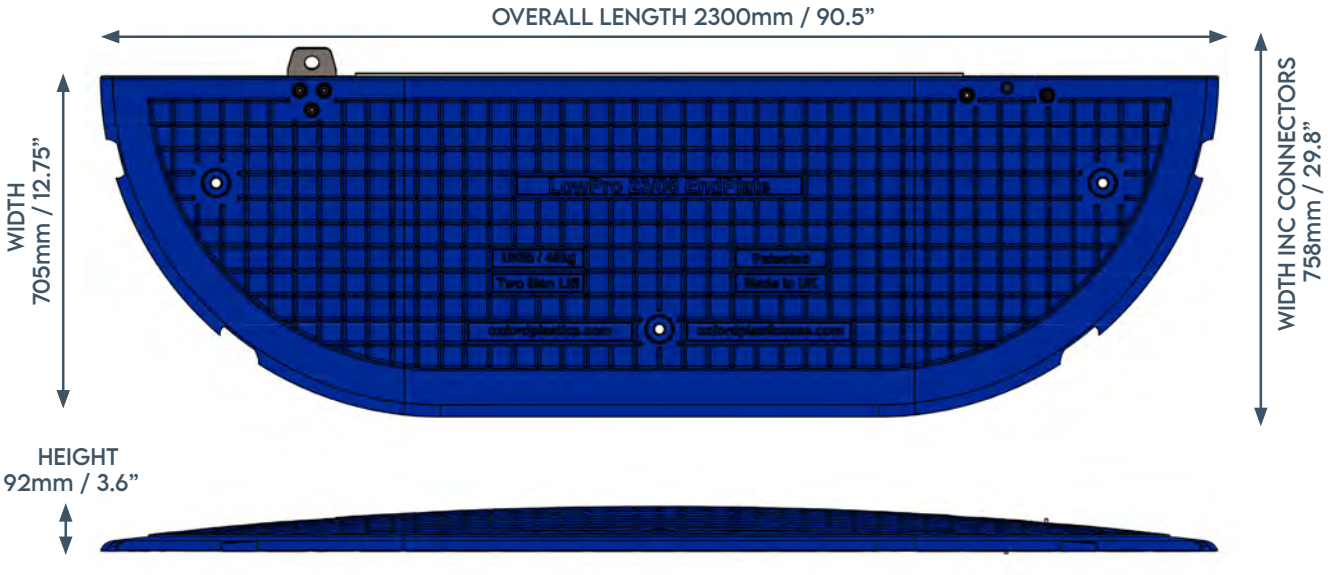
Use Road Plate End pieces to create a ramp at both ends.

DIMENSIONS AND WEIGHTS

LOWPRO 23/05 ROAD PLATE - INNER PIECE 65kg / 145lb



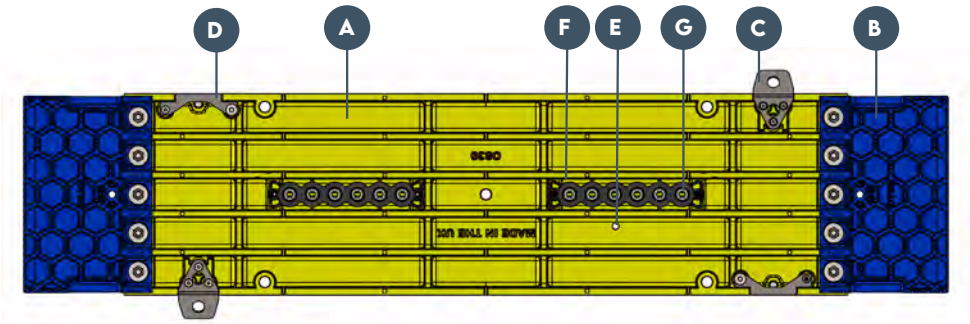
LOWPRO 23/05 ROAD PLATE - END PIECE 27kg / 60lb



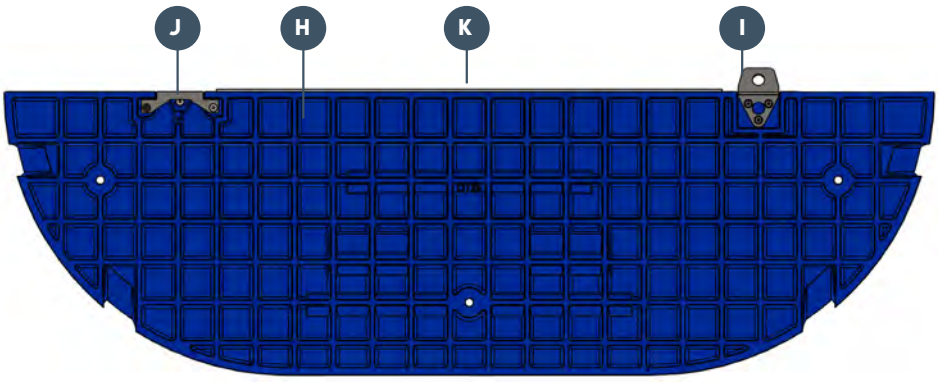
MATERIAL COMPOSITION AND PRODUCT LIFE

All elements use materials that if maintained correctly will not structurally degrade in UV light, in the presence of water or salts, and are stable in ambient temperatures from +50c to -30c

Batches are regularly load tested in the Oxford Plastics test facility as part of the quality control process.

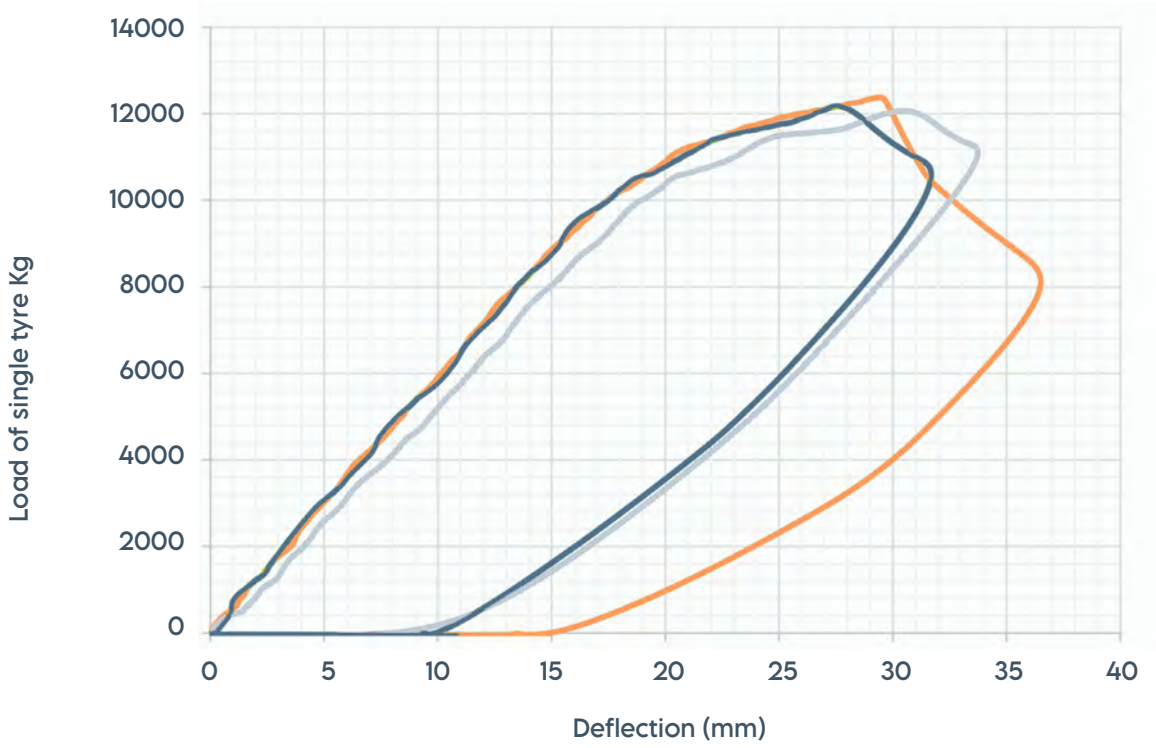


INNER PIECE	Part Name	Material
A	Main Body	Glass fibre reinforced polyester resin sheet moulding compound + Mild Steel encapsulated rebar grid
B	Flexi End	50% Queo Elastomer, 50% LDPE
C	Male Connector Plate	Galvanised mild steel
D	Female Connector Plate	Galvanised mild steel
E	Gas Monitoring Bung	HDPE
F	Drop Pin Tray	PP/PE
G	Drop Pins	Stainless Steel



END PIECE	Part Name	Material
H	Main Body	50% Queo Elastomer, 50% LDPE
I	Male Connector Plate	Galvanised mild steel
J	Female Connector Plate	Galvanised mild steel
K	Reinforcing Pultrusion	Glass fibre reinforced polyester resin

LOAD DEFLECTION DATA



Deflection at 6000Kg / 13,228lb	Ultimate load at failure
10.6mm / 0.42”	12,210Kg / 26, 918lb

Destructive testing has been carried out on the product to simulate deflection under the working load, and ultimate failure.

The testing is carried out by trained staff at Oxford Plastics specialist testing facility.

Results given are an average of 3 tests of different units.

Tab Data for the USA can be found in Appendix A.

PRODUCT RATING

The product is rated for use over spans of maximum 1200mm / 4’ by vehicles with a GVW of up to

44t / 97,000lb

TEST SPECIFICATION

Span
1200mm / 4’

Load Footprint
250mm / 9.8” diameter pad with rubber base to simulate single tyre

Load Location
Centre of product

MAXIMUM AXLE WEIGHTS

TERRITORY	Max single axle weight	Max single tyre weight
EU	11.0t	5.50t
Australia	8.2t	4.1t
New Zealand	10.0t	5.0t
Japan	7.7t	3.85t
Canada	7.3t	3.65t
USA	32,000lb	16,000lb

For more detailed data on:

Multiple axle loads,
Axle loads for different vehicles types,
Or territories not listed,

please consult and confirm with your relevant transit authority.

LOAD RATING OVER DIFFERENT SPANS

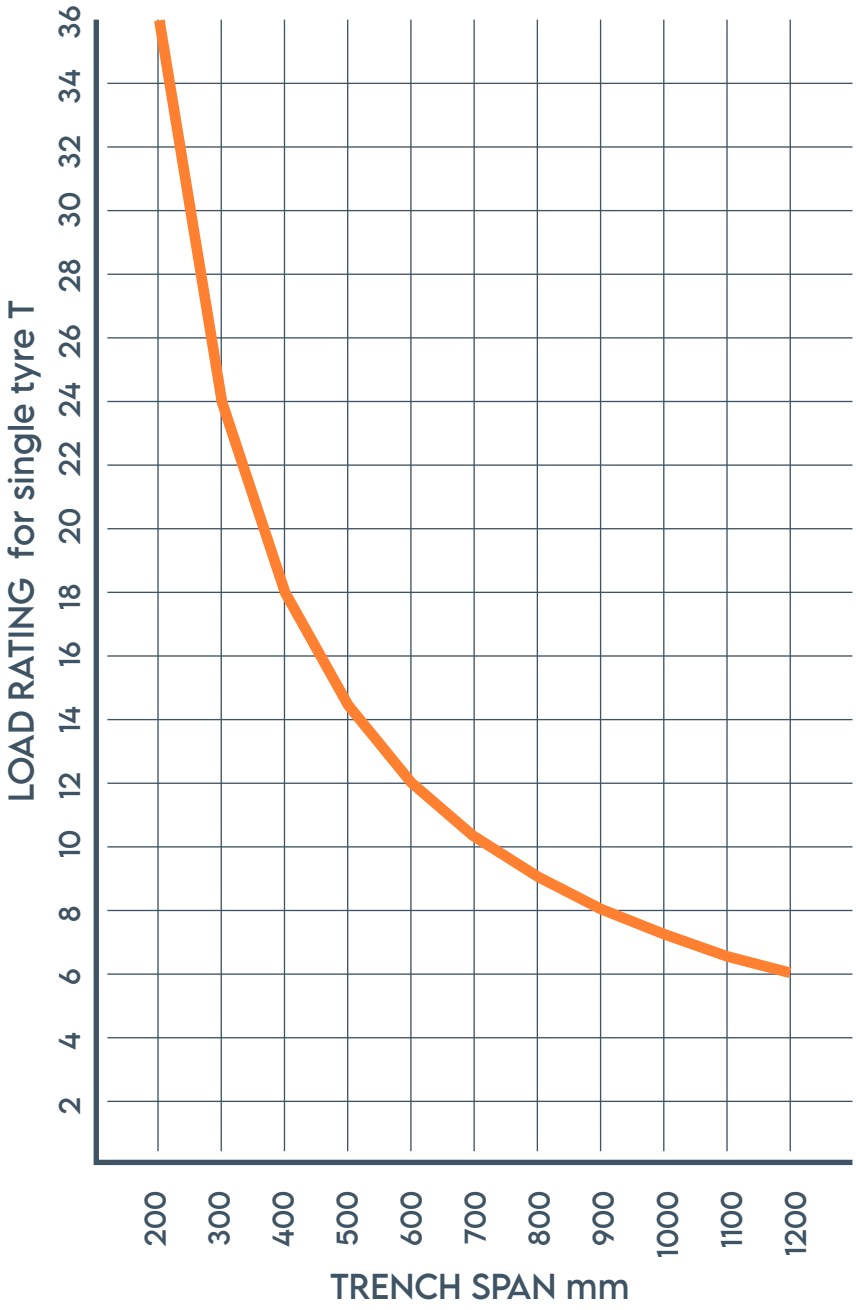
METRIC ASSESSMENT

Not to be used in USA, refer to sparate USA sheet.

Load rating for single tyre, tested with 250mm diameter test pad

The rating shown includes a factor of safety of 2.

The Ultimate load at failure is twice the figure shown.



QUICK REFERENCE

TRENCH SPAN	200mm	400mm	700mm	900mm	1200mm
LOAD RATING	36T	18T	10.2T	8T	6T

LOAD RATING OVER DIFFERENT SPANS

USA ASSESSMENT

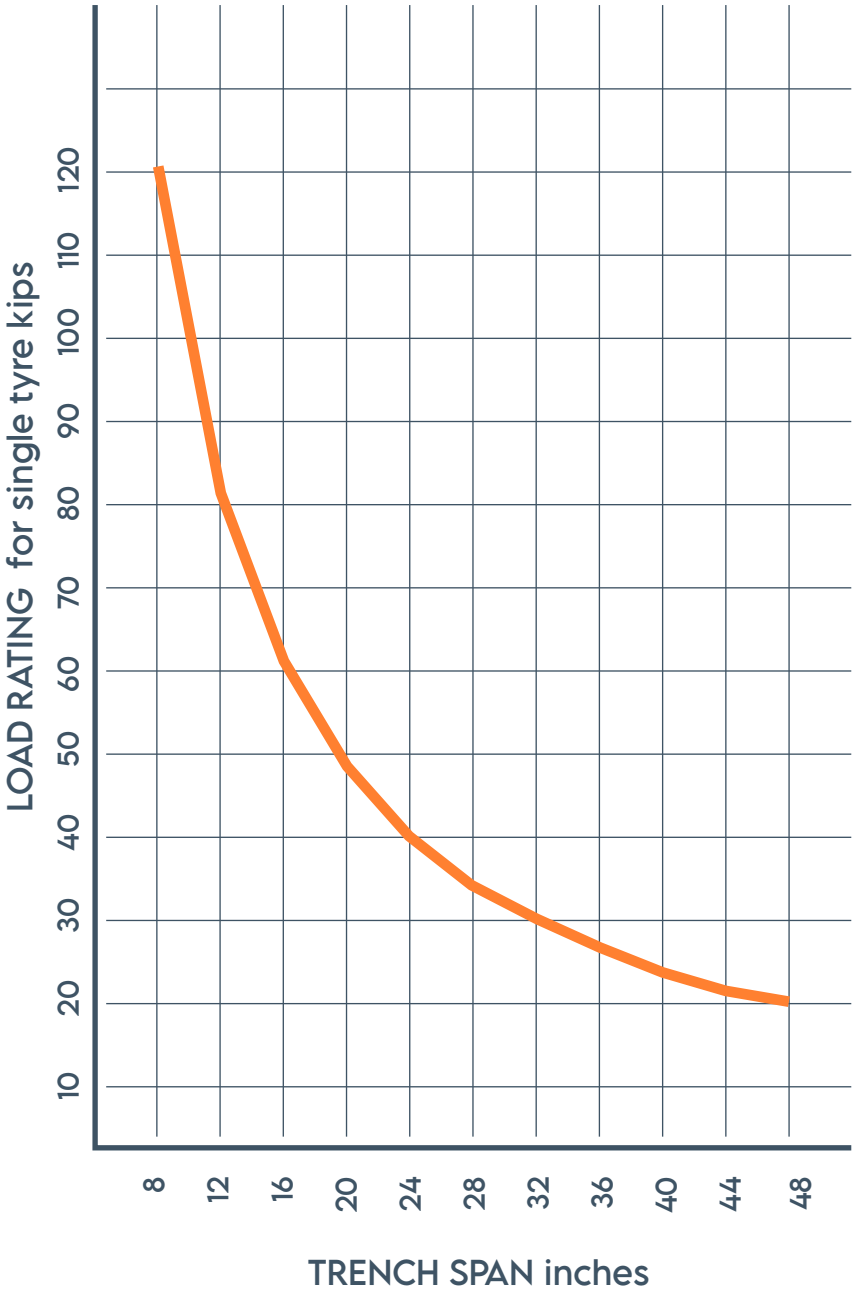
Only for use in USA, refer to sparate Metric Assessment for markets outside USA.

Load rating for single tyre, tested with 10" diameter test pad

The rating shown includes a impact factor of 1.3.

The Ultimate load at failure is 1.3 x the figure shown.

1 kips = 1,000lb



QUICK REFERENCE

TRENCH SPAN	8"	12"	24"	36"	48"
LOAD RATING	122.1kips	81.4kips	40.7kips	27.1kips	20.3kips

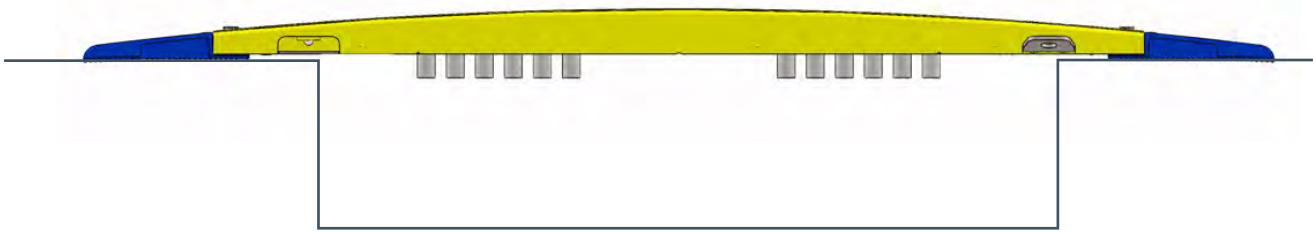
LOAD RATING FOR PEDESTRIAN ONLY USAGE

For scenarios where the product will only experience loads of up to 400Kg then the maximum span can be increased to 1500mm

The installer should carry out a risk assessment to ensure the edge of the trench is stable enough

The product must be positioned centrally on the trench

Note the drop pin system will not work at spans over 1200mm, so the installer should consider bolting down



PEDESTRAIN ONLY USE	Metric	Imperial
Max Span	1500mm	59”
Max Load	400Kg	880lb

SLIP RESISTANCE

Slip Resistance testing has been carried out by an independent test house, in line with the requirements of UK HSE 2012 document 'Testing the slip resistance of flooring'.

Testing was carried out in 3 directions in wet and dry conditions, using a calibrated Munro slip tester using Slider 55 and Slider 96.

CLASSIFICATIONS

High Slip Potential
0-24

Medium Slip Potential
25-35

Low Slip Potential
36+

SLIDER 96 TEST RESULTS - DRY	Median Result	Classification
Parallel to traffic	68	LOW SLIP POTENTIAL
45 degrees to traffic	62	LOW SLIP POTENTIAL
Perpendicular to traffic	55	LOW SLIP POTENTIAL

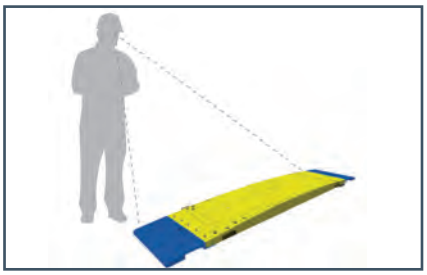
SLIDER 96 TEST RESULTS - WET		
Parallel to traffic	45	LOW SLIP POTENTIAL
45 degrees to traffic	44	LOW SLIP POTENTIAL
Perpendicular to traffic	40	LOW SLIP POTENTIAL

SLIDER 55 TEST RESULTS - DRY		
Parallel to traffic	67	LOW SLIP POTENTIAL
45 degrees to traffic	69	LOW SLIP POTENTIAL
Perpendicular to traffic	66	LOW SLIP POTENTIAL

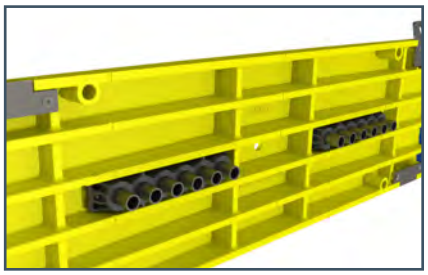
SLIDER 55 TEST RESULTS - WET		
Parallel to traffic	46	LOW SLIP POTENTIAL
45 degrees to traffic	39	LOW SLIP POTENTIAL
Perpendicular to traffic	40	LOW SLIP POTENTIAL

INSPECTION AND MAINTENANCE

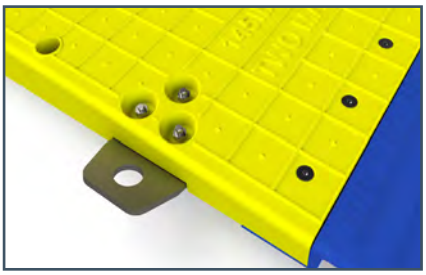
Products should be inspected and cleaned between every installation as follows.



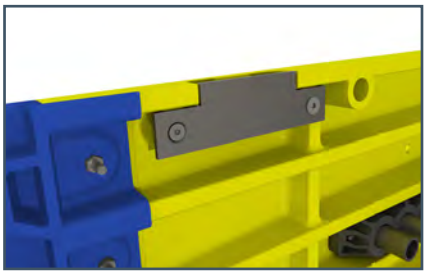
Inspect each product for signs of damage. See next page for signs of damage.



Ensure all drop pins are moving freely



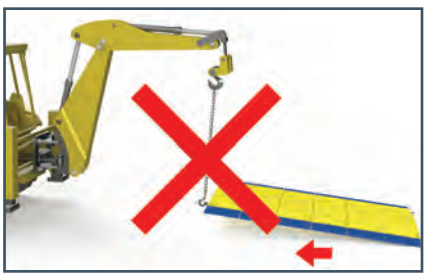
Ensure bolts on top surface are tight



Ensure bolts on underside are tight

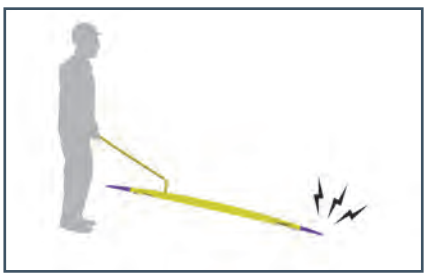
Clean product to remove debris, to maintain slip resistance properties

Care for the product by following the below guidance:



Do not drag the product

Do not lift the product as shown

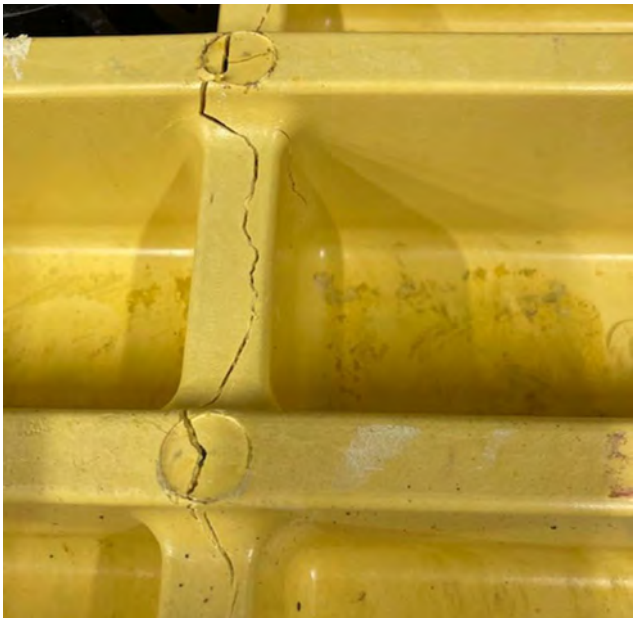


Do not drop the product

INSPECTION AND MAINTENANCE

The images below show the signs to check for during inspection. Cracks or a bent product indicate it has been damaged through improper use. These products need to be disposed of.

Crack along rib

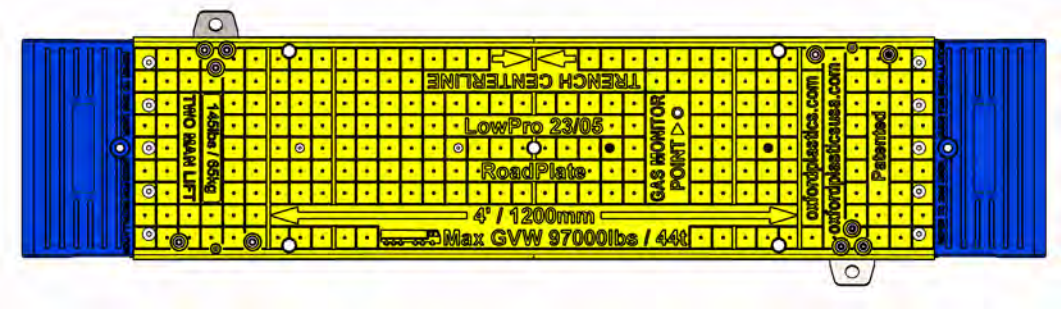


Close up of crack

The underside of the yellow section of the product is visibly bent. It should be flat.

INSPECTION SAFETY CHECKLIST

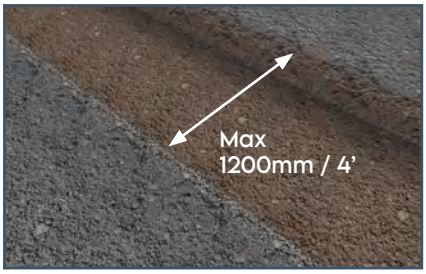
LowPro 23/05 Roadplate		Yes	No	If no:
1	Is the underside of the yellow section flat?			Do not use product.
2	Is the top of the yellow part free from cracks?			Do not use product.
3	Is the underside of the yellow part free from cracks?			Do not use product.
4	Are all bolts on top surface tight?			Tighten bolts.
5	Are all bolts on underside tight?			Tighten bolts.
6	Are all bolts in good condition?			Order replacement bolts
7	Is the top surface of the product clean?			Brush product clean.
8	Are the drop pins free of damage?			Order replacement drop pins
9	Are the Drop pins dropping down freely under gravity?			Check for debris that may prevent drop pins moving.



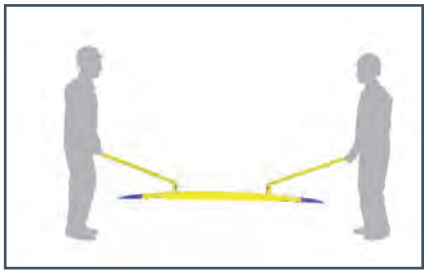
INSTALLATION AND SAFE HANDLING

Follow the process below for safe and effective installations

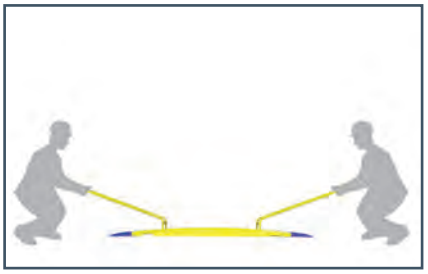
Risk assessments should be carried out to ensure the usage is suitable for the scenario



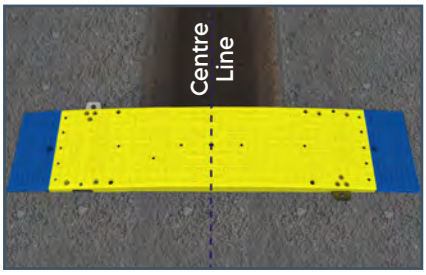
Ensure trench width less than 1200mm / 4'. Assess Trench stability prior to install



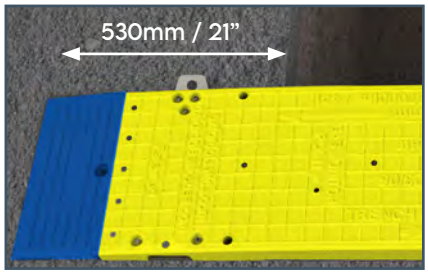
Two man lift at all times.
Use the EasiLift Handles, insert into the holes at each end of the inner pieces.



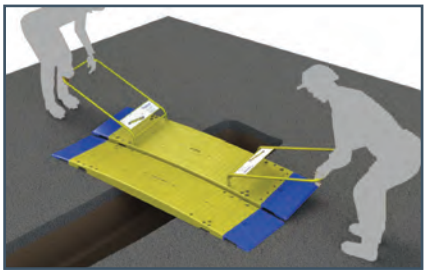
Bend at the knees in line with best practise.



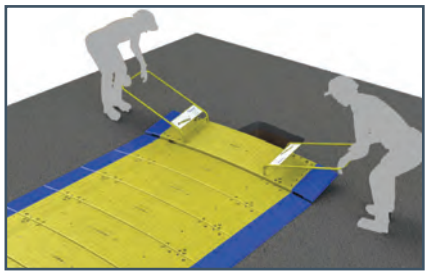
Position the first Inner Piece, using the centreline as a guide.



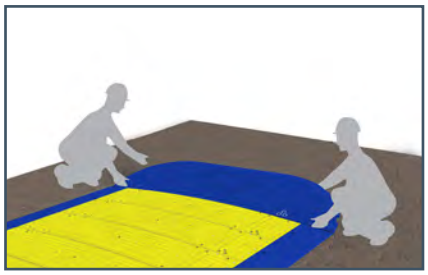
Check there is a minimum overlap of 530mm / 21".
Do this for every piece..



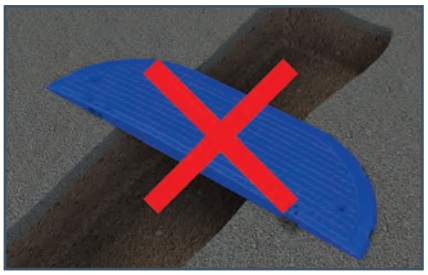
Move the next piece so that the connectors fit into the slots.
When engaged, gently lower the piece..



Repeat until the entire trench is covered with Inner Pieces.



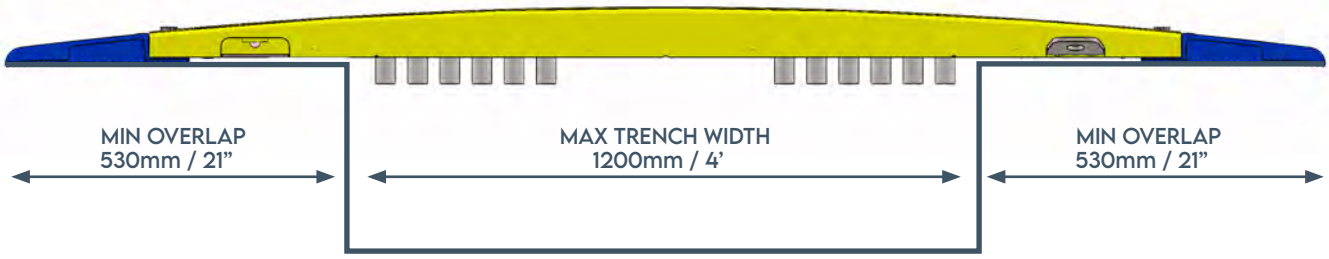
If required - Connect the End Piece. It is light enough to be installed without the EasiLift handles

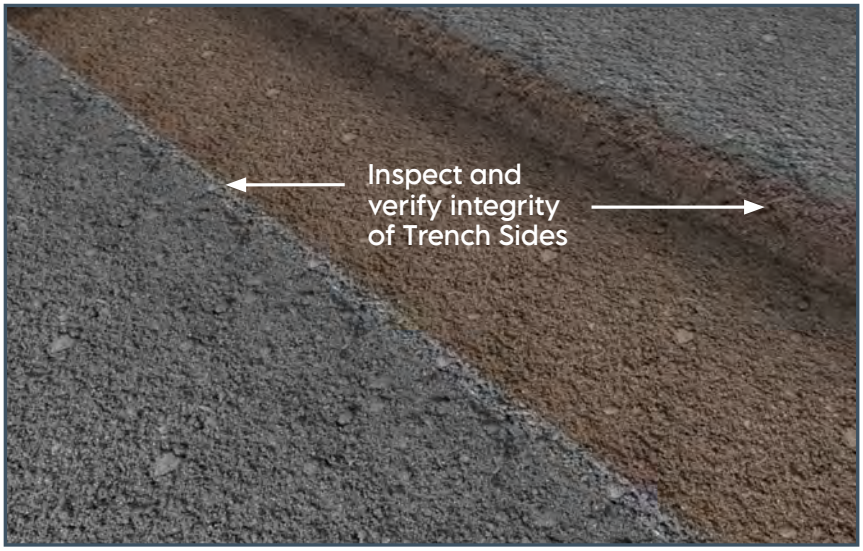


The End Piece is not load bearing and must be entirely on solid ground

OVERLAP AND SOIL CONDITIONS

Ensure the product is centred on the trench, with a minimum overlap as shown below.





SOIL CONDITIONS

The soil or other substrates at the trench edges must be capable of supporting the maximum weight of vehicle for the particular install.

Risk Assessments must be carried out prior to installation.

The LowPro 23/05 Road Plate is not suited for use if there is no trench.

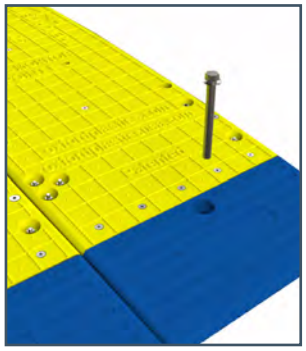
ANCHORING

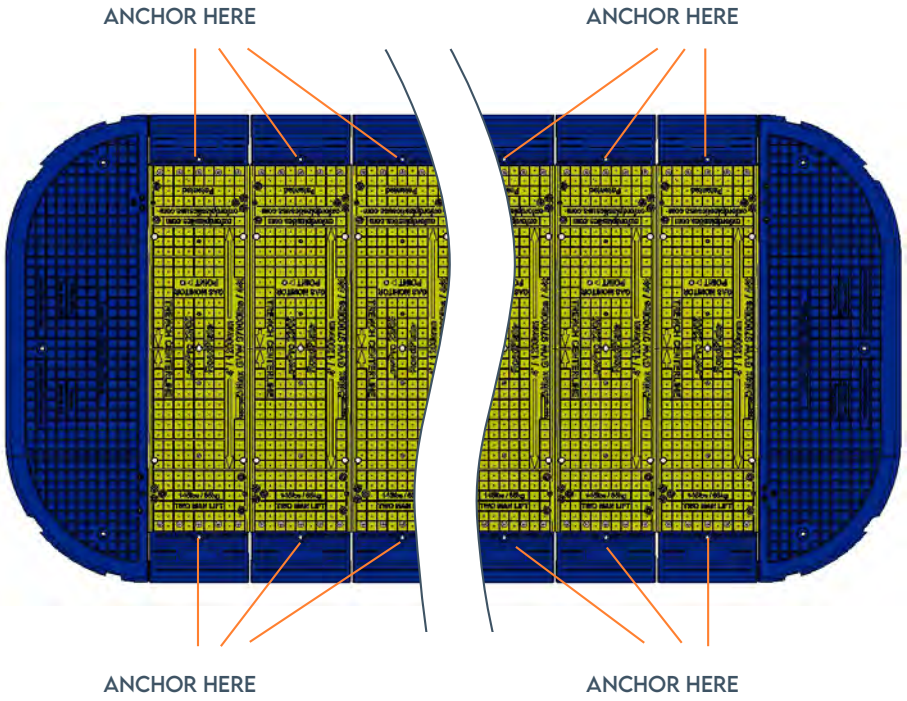
When a site is unattended it is recommended that each section is anchored securely to the road surface through the hole in the Flexi Edge.

An M16 x 150mm / 5/8" x 6' Masonry Anchor Bolt is typically used.

The installers must ensure the fixing used is suitable for the substrate conditions. Risk Assessments must be carried out prior to installation.

This set-up is also recommended at installations where traffic speeds exceed 30 mph / 48kph.





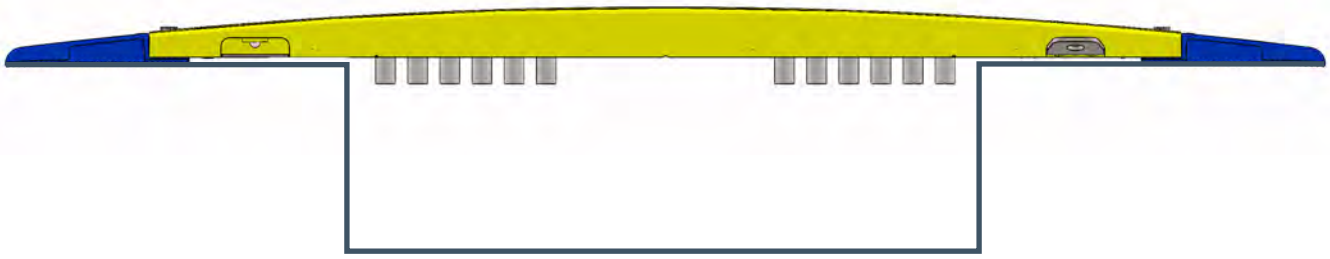
ADDITIONAL SECURITY

Drop pins deploy automatically under gravity as an additional safety measure.

This does not replace the need to anchor down.

SAFE SPEEDS AND CLEARANCE HEIGHT

CLEARANCE HEIGHT
96mm / 3.8”



SAFE SPEEDS

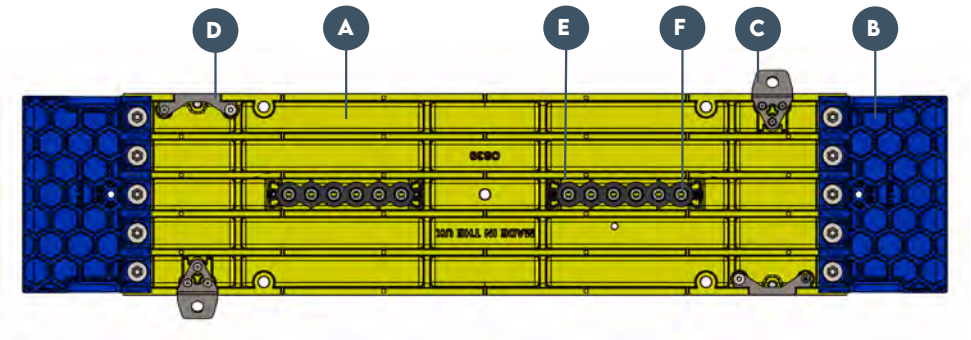
The product is designed for use in urban areas, for a maximum carriageway speed of

30mph / 48kph

Where traffic speeds exceed 30 mph / 48kph it is recommended to additionally bolt as per Unattended Sites.

REPLACEMENT PARTS AND TRACING

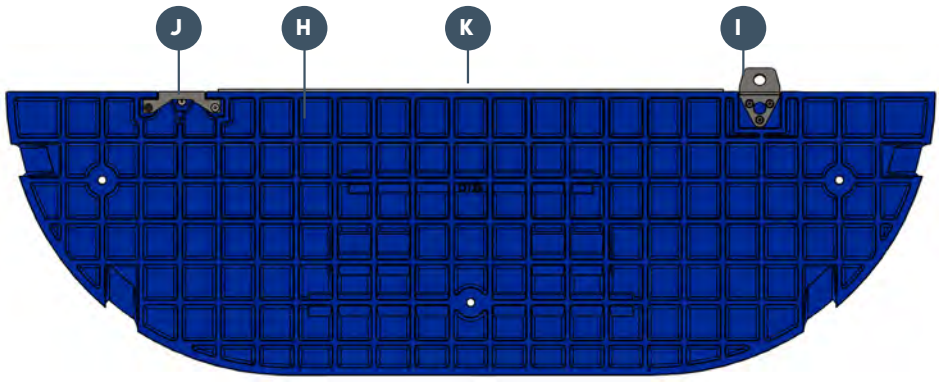
Parts are bolted together, enabling elements to be replaced easily in the unlikely event of damage



TRACING

Products have a waterproof label with a unique bar code and ID number, enabling tracing to the batch and date of manufacture.

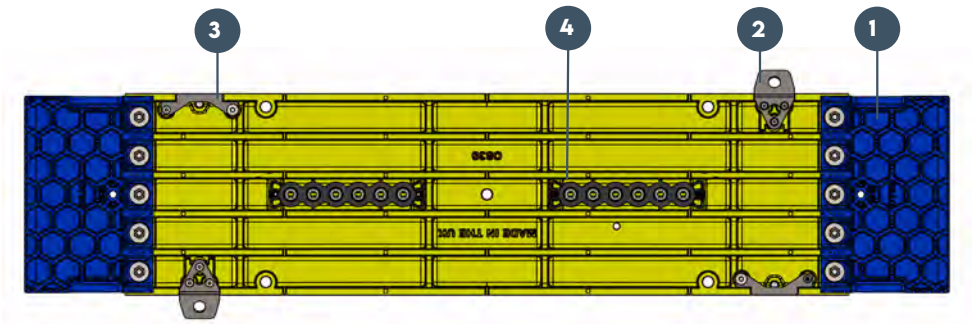
INNER PIECE	Part Name	Product Code
A	Main Body	O839
B	Flexi End	O719
C	Male Connector Plate	O724
D	Female Connector Plate	O724
E	Drop Pin Tray	O811
F	Drop Pins	O831



END PIECE	Part Name	Product Code
G	Main Body	O726
H	Male Connector Plate	O724
I	Female Connector Plate	O724

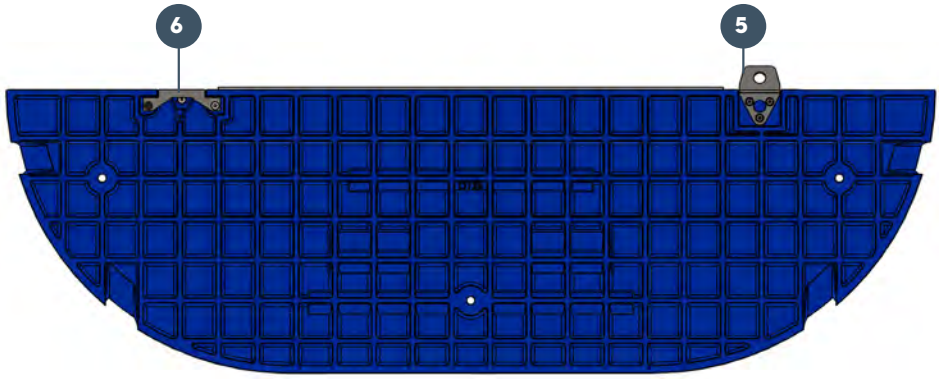
EASILIFT HANDLE
Product Code
O730

REPLACEMENT FIXINGS



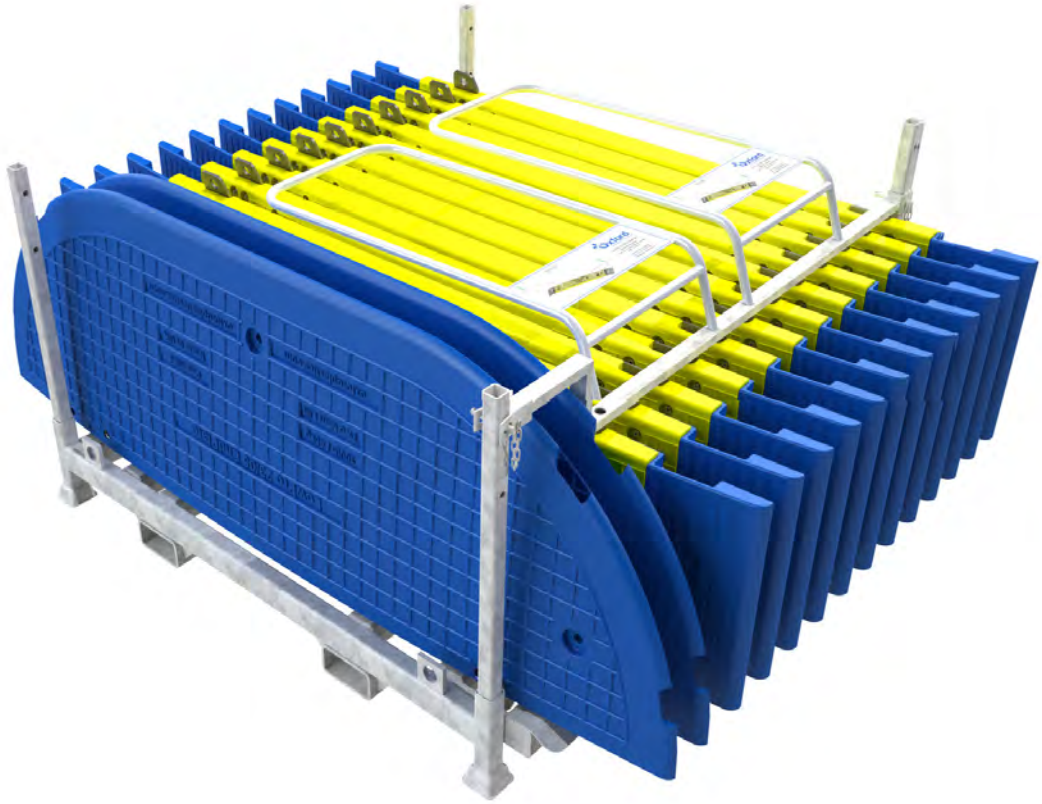
All fixings
Stainless Steel

	Fixings for	Metric	Imperial
1	Flexi End	TEN M8 CSNK MACHINE SCREW X 30 LNG TEN M8 WASHERS x 50 OD TEN M8 LOCK NUTS	TEN 5/16” CSNK MACHINE SCREW X 1.1/4” LNG TEN 5/16” WASHERS x 2” OD TEN 5/16” LOCK NUTS
2	Male Connector Plate	SIX M8 CSNK SOC HD MACHINE SCREW X 50 LNG SIX M8 LOCK NUTS SIX M8 WASHERS x 24 OD	SIX 5/16” CSNK SOC HD MACHINE SCREW X 2” LNG SIX 5/16” LOCK NUTS SIX 5/16” WASHERS x 1” OD
3	Female Connector Plate	TWO M8 CSNK SOC HD MACHINE SCREW X 50 LNG TWO M8 CSNK SOC HD MACHINE SCREW X 65 LNG FOUR M8 LOCK NUTS FOUR M8 WASHERS x 24 OD TWO M10 HEX DOME NUT TWO M10 CSNK MACHINE SCREW X 30 LNG	TWO 5/16” CSNK SOC HD MACHINE SCREW X 2” LNG TWO 5/16” CSNK SOC HD MACHINE SCREW X 2.1/2” LNG FOUR 5/16” LOCK NUTS FOUR 5/16” WASHERS x 1” OD TWO 3/8” HEX DOME NUT TWO 3/8” CSNK MACHINE SCREW X 1.1/4” LNG
4	Drop Pin Tray	FOUR M8 CSNK MACHINE SCREW X 30 LNG FOUR M8 LOCK NUTS	FOUR 5/16” CSNK MACHINE SCREW X 1.1/4” LNG FOUR 5/16” LOCK NUTS



	Fixings for	Metric	Imperial
5	Male Connector Plate	SIX M8 CSNK SOC HD MACHINE SCREW X 50 LNG SIX M8 LOCK NUTS SIX M8 WASHERS x 24 OD	SIX 5/16” CSNK SOC HD MACHINE SCREW X 2” LNG SIX 5/16” LOCK NUTS SIX 5/16” WASHERS x 1” OD
6	Female Connector Plate	TWO M8 CSNK SOC HD MACHINE SCREW X 50 LNG TWO M8 CSNK SOC HD MACHINE SCREW X 65 LNG FOUR M8 LOCK NUTS FOUR M8 WASHERS x 24 OD TWO M10 HEX DOME NUT TWO M10 CSNK MACHINE SCREW X 30 LNG,	TWO 5/16” CSNK SOC HD MACHINE SCREW X 2” LNG TWO 5/16” CSNK SOC HD MACHINE SCREW X 2.1/2” LNG FOUR 5/16” LOCK NUTS FOUR 5/16” WASHERS x 1” OD TWO 3/8” HEX DOME NUT TWO 3/8” CSNK MACHINE SCREW X 1.1/4” LNG

STILLAGE



The LowPro 23/05 Road Plate can be supplied with a specially designed stillage.

The Stillage can carry 12 x Inner Pieces, 2 x End Pieces, 2 x EasiLift handles. It also includes a storage box for bolts and tools.

The stillage can be disassembled for compact storage, and can be lifted with a fork lift or with chains.

2305 STILLAGE

PRODUCT CODE	O731
WEIGHT	197Kg / 434lb (Laden 910Kg / 2006lb)
HEIGHT	908mm / 35.8”
LENGTH	1724mm / 68.0”
WIDTH	1779mm / 70.0”
MATERIAL	Mild Steel
FINISH	Galvanised
CUSTOMISE	Custom sizes on request, subject to MOQ

SUSTAINABILITY

Oxford Plastics are dedicated to sustainability. We build the circular economy into our products by designing them to be easy to use, long-lasting, repairable and recyclable.

The LowPro Road Plates, a direct replacement for steel plates are a much more sustainable solution when compared.

LowPro Road Plates reduce up to 78% of CO2e compared with heavy steel road plates*.

*Please refer to Oxford Plastics Carbon Footprint & Product Report for more information

ASSOCIATED PRODUCTS

When setting up a street works site, other Oxford Plastics solutions can be used to ensure compliance is achieved. Browse our Chapter 8 solutions; including advanced barrier systems, trench covers, road plates, wheelchair ramps and street works signs.

ADVANCED BARRIER SYSTEMS

PORTABLE GATE BARRIERS

STREET WORKS SIGNS

WHEELCHAIR RAMPS

TRENCH COVERS

ROAD PLATES

TRENCH COVER GUIDE

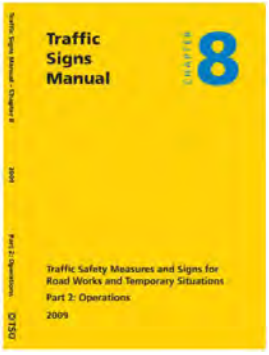
COMPOSITE TRENCH COVERS CAN BE INSTALLED IN THE FOLLOWING SCENARIOS.

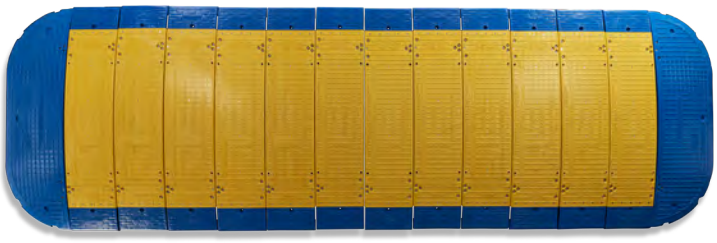
- A Site Safety Risk Assessment must be carried out before installation, only install on compacted surfaces such as concrete or asphalt. Always place the trench cover centrally over the excavation.
- In some instances, road plates and trench covers must be bolted for safety, refer to the installation guide for more details.
- Trench covers have a maximum width allowance.
- Trench covers can be linked together to safely cover any length of excavation.
- The LowPro range is HAUC Compliant.
- LowPro 15/05 and LowPro 23/05 are HS20-44 load rated.
- Trench covers must be installed centrally over the trench.

MAXIMUM TRENCH WIDTH	WHAT TYPE OF TRAFFIC WILL CROSS THE TRENCH?		
	FOOTWAY 400KG / 880LBS	**DRIVEWAY** 3.5T / 7715LBS VEHICLE	**ROADWAY** 44T / 97000LBS VEHICLE
100MM 4"	 LowPro 100	 LowPro 100	 LowPro 15/05
700MM 2FT	 LowPro 12/8  LowPro 11/11	 LowPro 15/10	 LowPro 15/05
900MM 3FT	 LowPro 15/10	 LowPro 15/10	 LowPro 23/05
1200MM 4FT	 LowPro 15/10	 LowPro 23/05	 LowPro 23/05

CODE COMPLIANCE

HAUC UK
HIGHWAY AUTHORITIES & UTILITIES COMMITTEE





WHAT IS REGULATORY COMPLIANCE?

The Street Works manual, or red book tells contractors how to set up their street works site in a compliant manner. HAUC tell manufactures how to make compliant products. Oxford Plastics design composite trench covers that are 100% compliant with HAUC 2018/01 advice note - SPECIFICATION AND OPERATIONAL REQUIREMENTS FOR FOOTWAY BOARDS, DRIVEWAY BOARDS, FOOTWAY RAMPS AND ROAD PLATES, Department for Transport - Safety At Street Works And Road Works – A Code Of Practice, Department for Transport TAL 6/14 - Using road plates at road works.

The LowPro 23/05 Road Plate is compliant with the above regulations for streetworks use.

HISTORY OF USE

Our composite Road Plates and Trench Covers have been used extensively:

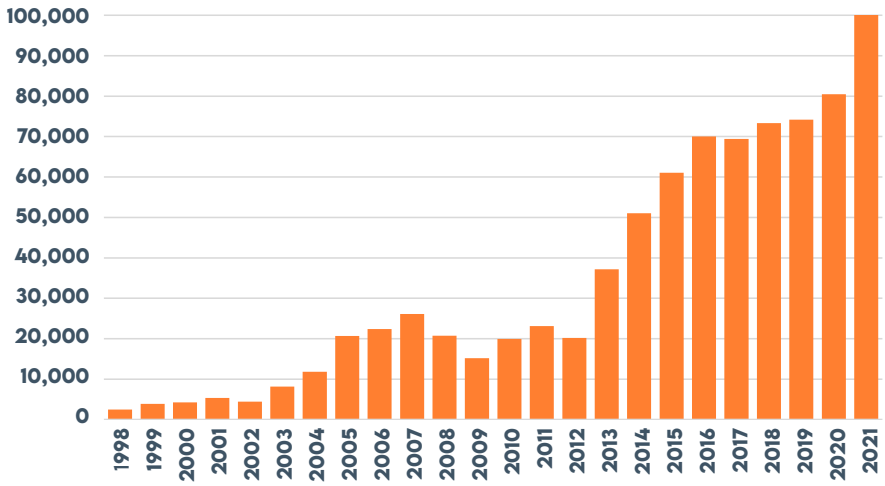
METROPOLITAN USERS

London
New York
Paris
Munich
Seoul
Madrid
San Francisco
Tokyo
Sydney

UTILITY USERS

Gas
Water
Telecoms
Electricity

COMPOSITE ROAD PLATE & TRENCH COVER SALES



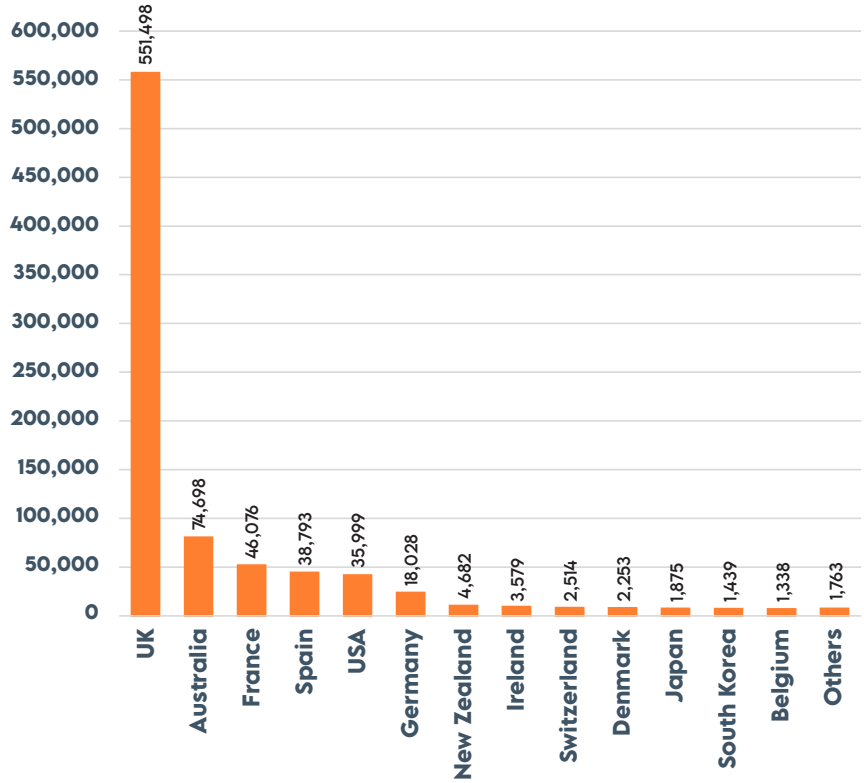
UNIT SALES

First concepts and products launched

1998

Worldwide sales since launch

+£54m



UNIT SALES BY COUNTRY

Countries using composite Road Plates and Trench Covers

42

Installations globally

+784k

CONTACT INFORMATION

UK & R.O.W

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Unit T2, Enstone Business Park
Enstone,
Chipping Norton
Oxfordshire
OX7 4NP
United Kingdom

sales@oxfordplastics.com
Tel: +44(0)1608 678888

USA

Oxford Plastic Systems LLC
1011 Centre Rd,
Suite 312,
Wilmington
DE
19805
USA

info@oxfordplasticsusa.com
1-800-567-9182

APPENDIX A

USA Engineering approval tabulated data

See following pages

J.M. TURNER ENGINEERING, INC.
CONSULTING ENGINEERS

CIVIL, STRUCTURAL, & CONSTRUCTION ENGINEERING

1325 College Avenue * Santa Rosa, CA 95404 * Phone (707) 528-4503 * Fax (707) 528-4505

E-MAIL TRANSMITTAL COVER SHEET

TO:	David Sardinha/Peter Creighton	FROM:	Hans Vermeulen
COMPANY:	Oxford Plastics	DATE:	7/24/2019
PHONE:	401-497-0821	PAGES:	09 including cover sheet
E-MAIL:	See Below	RE:	23/05 Manufacturers TD Sheet

E-MAILED BY: Sarah R. TIME: 10:00 am

MESSAGE:

David.sardinha@oxfordplasticsusa.com ; peter.creighton@oxfordplastics.com Job #17018-1

Mailed copies are available upon request.

Thank you!

OXFORD PLASTICS USA.

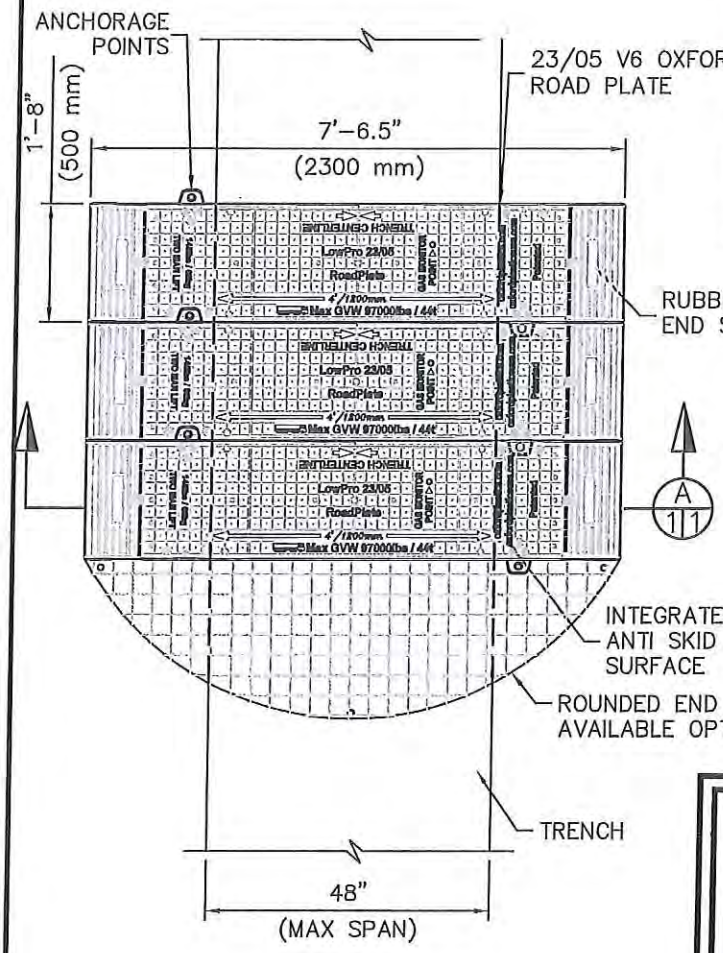
MANUFACTURERS TABULATED DATA SHEET

23/05 V6 OXFORD ROAD PLATE

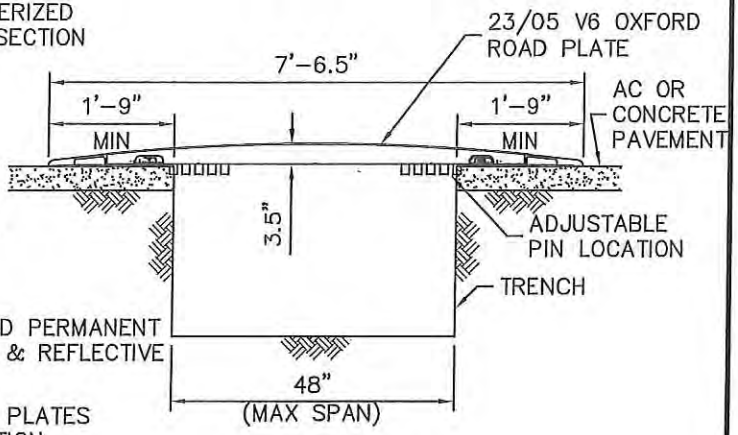
BASED ON HS-20-44 LOADING

PLATE SIZE (FT)	MAX. SPEED (MPH)	MAX. ALLOW. SPAN (FT)	DESIGN IMPACT FACTOR
1'-8"x7'-6.5" (0.5mx2.3m)	< 30	4'-0"	1.3
1'-8"x7'-6.5" (0.5mx2.3m)	> 30 *	4'-0"	1.3

* ANCHORAGE REQUIRED



PLAN VIEW



SECTION A 1|1

ADRIANUS J. VERMEULEN
STATE OF RHODE ISLAND
No. 9273
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
7/24/19

NOTES:

1. PLATE MATERIAL TO BE GLASS REINFORCED POLYESTER W/ STEEL REINFORCEMENT.
2. PLATES ARE DESIGNED FOR HS-20-44 LOADING = 32,000 lb AXLE, 16,000 lb TIRE LOAD WITH IMPACT FACTOR OF 1.3.
3. THE MAX SPAN IS MEASURED FROM ASPHALT OR CONCRETE EDGE TO ASPHALT OR CONCRETE EDGE.
4. CHART IS BASED ON STABLE TRENCH. STABILITY TO BE DETERMINED BY COMPETENT PERSON OR PROFESSIONAL ENGINEER. SHORING MAYBE REQUIRED.
5. IF SPEED EXCEEDS 30 mph, PLATE MAY REQUIRE ANCHORAGE.
6. SEE MANUFACTURES INFO FOR USE AND GUIDANCE.
7. THE INSTALLATION OF THE OXFORD ROAD PLATES MUST NOT PRESENT A HAZARD TO CYCLISTS OR MOTOR CYCLES.

TITLE: *23/05 V6 OXFORD ROAD PLATE*

OXFORD PLASTICS USA.
101 DEXTER ROAD
PROVIDENCE, RI. 02914

J.M. TURNER ENGINEERING, INC.
CONSULTING ENGINEERS
1325 COLLEGE AVE., SANTA ROSA, CA 95404
(707) 528-4503 FAX (707) 528-4505

DATE:	REVISED:	FILE NO:
07/22/19		17018-1/P1

OXFORD PLASTICS USA.

MANUFACTURERS TABULATED DATA SHEET

23/05 V6 OXFORD ROAD PLATE

ADDITIONAL LICENSES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Adrianus J. Vermeulen

Date 7/24/2019 License # 48822

TITLE:
23/05 V6 OXFORD ROAD PLATE

OXFORD PLASTICS USA.
101 DEXTER ROAD
PROVIDENCE, RI. 02914

J.M. TURNER ENGINEERING, INC.
CONSULTING ENGINEERS
1325 COLLEGE AVE., SANTA ROSA, CA 95404
(707) 528-4503 FAX (707) 528-4505

DATE:	REVISED:	FILE NO:
07/22/19		17018-1/P2

OXFORD PLASTICS USA.

MANUFACTURERS TABULATED DATA SHEET

23/05 V6 OXFORD ROAD PLATE

ADDITIONAL LICENSES

PROFESSIONAL ENGINEER - STATE OF NEVADA
ADRIANUS J. VERMEULEN
Exp: 6/30/2020
CIVIL
NO. 018990

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER
ADRIANUS J. VERMEULEN
No. 12771
LICENSED

ADRIANUS J. VERMEULEN
NEW MEXICO
20457
PROFESSIONAL ENGINEER

NORTH CAROLINA
PROFESSIONAL SEAL
035531
ENGINEER
ADRIANUS J. VERMEULEN

ADRIANUS J. VERMEULEN
REGISTERED
PROFESSIONAL
PE-6590
ENGINEER
NORTH DAKOTA

STATE OF NEW YORK
ADRIANUS J. VERMEULEN
No. 085281
LICENSED PROFESSIONAL ENGINEER

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 27983
ADRIANUS J. VERMEULEN

Date 7/24/2019

STATE OF TEXAS
ADRIANUS J. VERMEULEN
107042
LICENSED
PROFESSIONAL ENGINEER

J.M. TURNER ENG INC.
F-11311

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
ADRIANUS J. VERMEULEN
ENGINEER
No. PE-079273

REGISTERED PROFESSIONAL ENGINEER
79695PE
EXP. 6/30/2020
OREGON
JANUARY 1, 2008
ADRIANUS J. VERMEULEN

ADRIANUS J. VERMEULEN
STATE OF WASHINGTON
43601
REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
No. 6641734
Adrianus J.Vermeulen
STATE OF UTAH

Dated: 1/24/2019

ADRIANUS J. VERMEULEN
CERTIFICATE
No. 1577
CIVIL
EXP. 4/30/2020
GUAM
PROFESSIONAL ENGINEER

TITLE:
23/05 V6 OXFORD ROAD PLATE

OXFORD PLASTICS USA.
101 DEXTER ROAD
PROVIDENCE, RI. 02914

J.M. TURNER ENGINEERING, INC.
CONSULTING ENGINEERS
1325 COLLEGE AVE., SANTA ROSA, CA 95404
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DATE:	REVISED:	FILE NO:
07/22/19		17018-1/P3

J.M. TURNER ENGINEERING, INC.
Consulting Engineers
CIVIL ENGINEERING • STRUCTURAL ENGINEERING
CONSTRUCTION ENGINEERING

23/05 OXFORD ROAD PLATE TABULATED DATA

48" MAX CLEAR SPAN TRENCH OPENING

OXFORD PLASTICS USA
101 Dexter Road
Providence, Rhode Island

Design of 23/05 V6 Oxford Road Plate is based on HS20-44 Traffic Loading with an Impact Factor of 1.3. The maximum allowable clear span = 48 inches (1200 mm). Road Plate size is 1'-8" x 7'-6.5" (500 mm x 2300 mm)

ADRIANUS J. VERMEULEN
STATE OF RHODE ISLAND
No. 9273
HOPE
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
7/24/19

DATE: 07/22/2019
DESIGN BY: A.J.V.
SHEET NO: 1 of 5
JOB#: 17018-1

1325 COLLEGE AVE. • SANTA ROSA, CA 95404-3909 • (707) 528-4503 FAX (707) 528-4505

J.M. TURNER ENGINEERING , INC.
1325 COLLEGE AVENUE
SANTA ROSA, CA 95404
PH# : (707) 528-4503
FAX# : (707) 528-4505

SUBJECT: Oxford Plastics USA — SHEET NO.: 2 OF ____
23/05 V6 Road Plate Tabulated Data — BY: AJV DATE: 07/22/19
Road Plate Calculations — CHKD BY: ____ DATE: ____

Check Worst Case Loading From HS-20-44:

Axle Load (kips): $P_{axle} := 32.0$

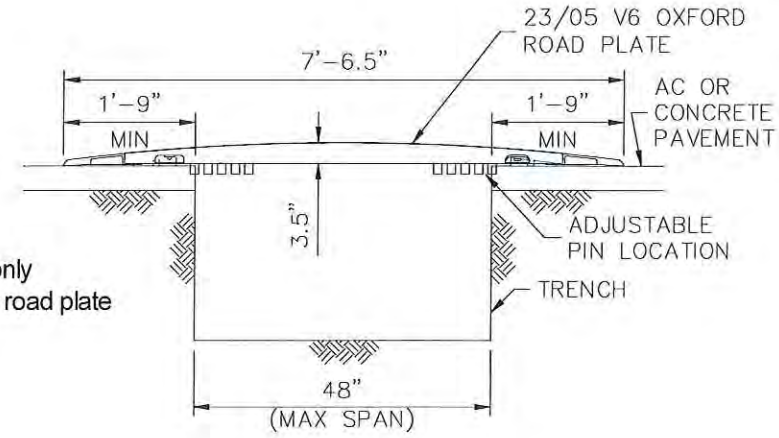
Tire Load (kips): $P_{tire} := 16.0$

Impact Factor: $IF := 1.3$

Design Load (kips): $P := P_{tire} \cdot IF$ $P = 20.8$

Width of Axle (ft): $D := 6$ note that there will only be one tire load per road plate

Span Length (ft): $L := 4.0$ (1200mm)



23/5 Road Plate capacity based on HS20-44 Load Testing including 1.3 impact factor:

Ultimate testing Load (Metric Tonnes): $P_{tonnes} := 12.0$

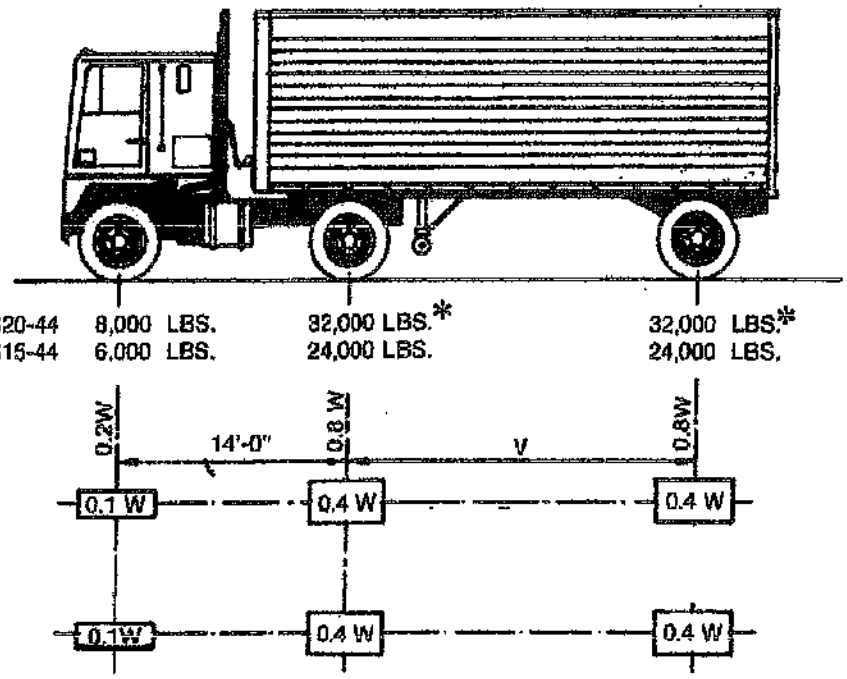
Ultimate Load (kips): $P_{ult} := P_{tonnes} \cdot 2.2$ $P_{ult} = 26.4$

Factor of Safety of Plate: $FS := \frac{P_{ult}}{P}$ $FS = 1.27$ compared to HS20-44 loading ...**OK**

23/5 Road Plate deflection capacity based on Load Testing:

Maximum deflection at testing load (mm) $Mdfmax := 25$ mm

Maximum deflection at breaking point (In) $Mdfl := \frac{Mdfmax}{25.4}$ $Mdfl = 0.98$ < 1.0 Inches Allowable .. OK



W = COMBINED WEIGHT ON THE FIRST TWO AXLES WHICH IS THE SAME AS FOR THE CORRESPONDING H TRUCK.

V = VARIABLE SPACING — 14 FEET TO 30 FEET INCLUSIVE. SPACING TO BE USED IS THAT WHICH PRODUCES MAXIMUM STRESSES.

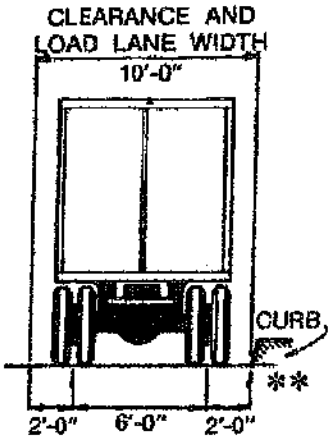


FIGURE 3.7.7A Standard HS Trucks

* In the design of timber floors and orthotropic steel decks (excluding transverse beams) for H 20 loading, one axle load of 24,000 pounds or two axle loads of 16,000 pounds each spaced 4 feet apart may be used, whichever produces the greater stress, instead of the 32,000-pound axle shown.

** For slab design, the center line of wheels shall be assumed to be 1 foot from face of curb. (See Article 3.24.2)