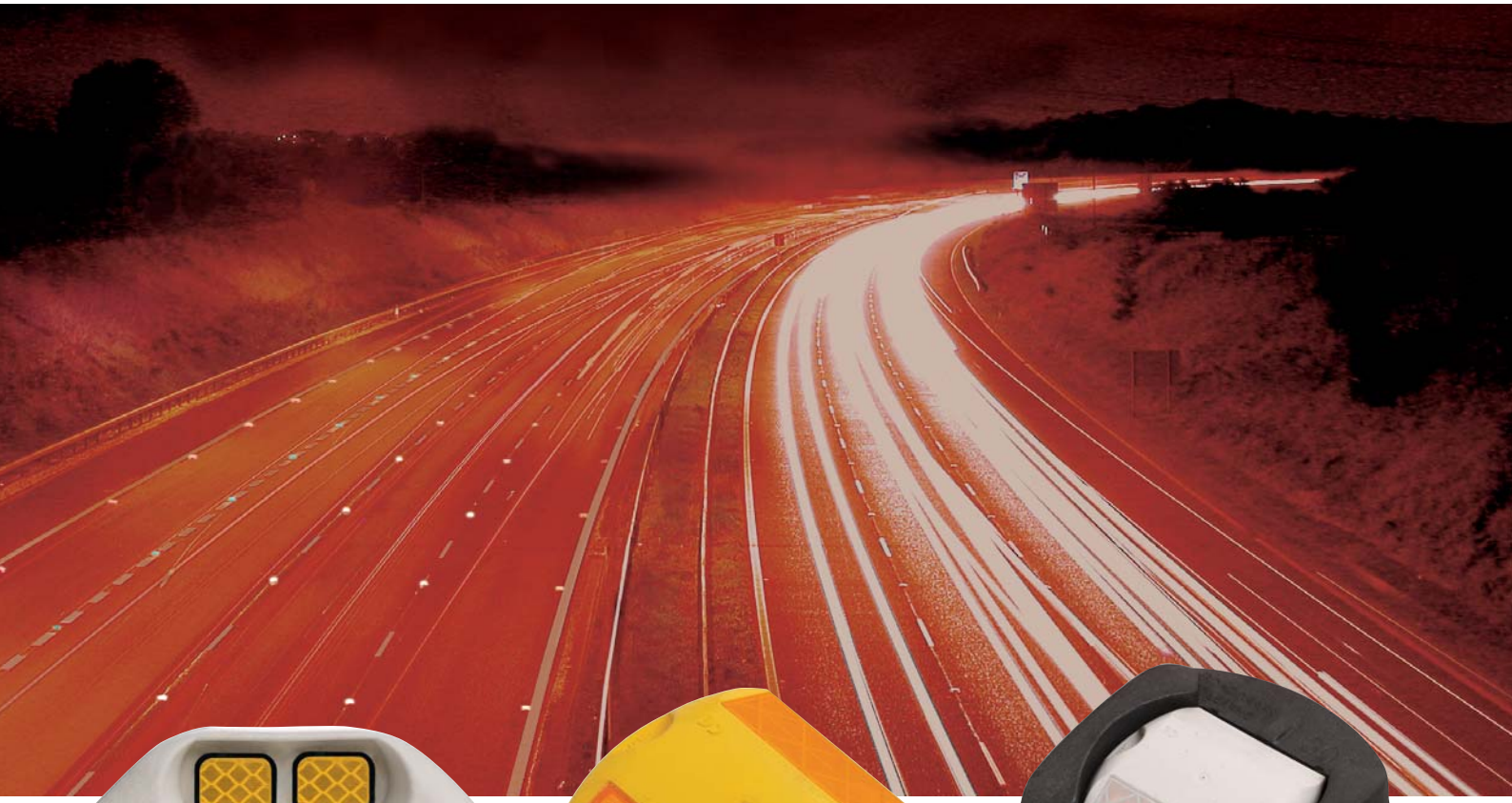


RoadCraft and Fleming are the principal European distributors of 3M Traffic Safety Systems Highway Safety products.

We have been in partnership for many years, supplying highway markers throughout the UK and across much of Europe.

Vehicle Drivers continue to have guidance from roadstuds at night when conditions of inclement weather has obliterated other traffic marking systems.

301/290 3M™ Marker Series Roadstud

The Embedded 301 Inset Reflecting Roadstud

301 inset Roadstuds have become first choice for many engineers who require high value nighttime reflectivity combined with long life performance.

Further enhancements with even higher values are now available. 3M's higher retro-reflective technology and advanced optical design will further improve night-time driving particularly in adverse weather conditions. The 301 now utilises the latest ultra fast reflector fixing system which with high all-weather tolerance and fast grab components greatly extend its life on the road.

301 Roadstuds are available in two reflective versions, the 301/290 and the 301/190. Both give excellent night-time guidance. The robust construction and intelligent design delivers outstanding value and excellent longevity.

301/290 ROADSTUD

We have taken the highly successful 3M 290 surface applied roadstud and combined it with the newly designed 301 base. It effectively integrates the well proven retro performance of the 3M 290 with the robust 301 base. This creates an innovative roadstud that will give many years of high performance even on roads with exceptionally heavy traffic.

301/190 ROADSTUD

The 3M 190 reflector has proved itself in the most vigorously snowploughed areas of North America. We have now incorporated it into a 301 base to give the ultimate protection to the reflector signal. Smaller than the 290 reflector, but with similar night-time values over a long periods of use, the 301/190 will give good long term durability and an excellent night-time guidance.

PRODUCT BULLETIN

For further details please request a relevant product bulletin or download one from our website www.roadstuds.co.uk

301 Roadstud

INFO

The family of 301 Roadstuds now comes in two versions. Thanks to the support of the 3M Traffic Safety Systems Division we offer a 190 and a 290 variant. Both offer superior performance with an excellent night-time retro signal. Plus both boast design enhancements which ensure long life.

PERFORMANCE

Both versions offer easy installation. Refer to our Toolkit selector and Products pages for further help.

MATERIALS

The 301 is a two component non depressible embedded roadstud. The cast metal base has a high impact polycarbonate reflector inset into it. This reflector is given ample protection by the carefully designed traffic guide rails.

RECOMMENDATIONS

The 301 is recommended for use on all roads but is especially suitable for those experiencing heavy traffic. Specify P3A Inset.

Benefits

- **Superior retro reflectivity** using proven 3M technology.
- **Reflectors protected** with cast iron protective guide rails.
- **Installed** using traditional vertical milling machine.
- **Supplied** complete - reflector already fitted.
- **Durable** – robust construction and intelligent design for long life.

England and Wales, EEC Countries contact Roadcraft Ltd: 01934 825 850
Scotland, Northern Ireland, Irish Republic contact Fleming & Company: 0141 881 8155
North East England contact Fleming & Company: 0191 214 5454

www.roadstuds.co.uk

3M™ Marker Series 590
Depressible Reflecting Roadstud

Introduced by 3M in 2007, the 3M Marker Series 590 Depressible Roadstud combines the superior brightness of microprismatic sheeting with all the strength and durability of a depressible roadstud. Reflects 7 times more light back to the driver than is required for a glass beaded roadstud in a straight-on geometry situation.

APPLICATION / SUITABILITY
The 590 depressible roadstud has been designed to slot neatly into any of the current UK approved metal bases. It's therefore easy to replace a worn or missing glass beaded depressible stud with a more reflective one - no need for extra tooling or training.

EFFECTIVE PERFORMANCE LIFE
The reflective elements are covered with a self healing protective polyurethane resin coating. This creates a tough barrier which protects against scratches, abrasions and spray from the road. The rubber body is specially formulated to withstand years of exposure in the toughest climates.

PRODUCT CONSTRUCTION/SPECIFICATION
The 3M 590 incorporates reflective lenses made of 3M Diamond Grade™ DG^3 reflective sheeting. These are covered with 3M's self healing protective polyurethane resin coating. The rubber body is specially formulated to resist weathering caused by ozone, ultraviolet rays, sunlight and rapid changes in temperature.

APPLICATION SURFACE
The 590 roadstud is compatible with all current UK Department of Transport approved metal bases. They are therefore suitable for replacing worn studs where the metal housing is already installed, or on new roads where the approved metal housing is sourced separately.

PRODUCT BULLETIN
For more detailed technical information please request a relevant product bulletin or download one from our website www.roadstuds.co.uk

3M™ Marker Series 590

INFO

The 590 depressible roadstud reflects 7 times more light back to the driver.

PERFORMANCE

The 590 roadstud is compatible with all current UK Department for Transport approved metal bases. Refer to our Toolkit selector and Products pages for further help.

MATERIALS

Reflective lenses made of 3M Diamond Grade™ DG³ reflective sheeting. These are covered with 3M's self healing protective polyurethane resin coating.

RECOMMENDATIONS

Suitable for use within a maintenance programme or as a new roadstud wherever a depressible type of stud is required. Specify P3B Component.

Benefits

- **Improved visibility** for driver safety.
- **More reflective** than glass beaded studs in a straight-on geometry.
- The only depressible roadstud which **meets the reflectivity requirements of Type 3 Roadstuds** (as per EN 1463-1:1998)
- Little scattering and **minimal diffusion of light.**
- **Excellent retro-reflectivity** in wet and dry conditions.
- **No extra tooling or training required** to replace worn or missing glass beaded studs with the 590 depressible roadstud.
- **Self healing** protective polyurethane resin.
- **Robust construction** for durability and long-life.

England and Wales, EEC Countries contact Roadcraft Ltd: 01934 825 850
Scotland, Northern Ireland, Irish Republic contact Fleming & Company: 0141 881 8155
North East England contact Fleming & Company: 0191 214 5454

www.roadstuds.co.uk

3M™ Marker Series 290
Reflecting Roadstud

The 3M 290 Roadstud is a high performance permanent surface mounted reflecting roadstud. 3M has combined innovative technologies, including advanced optical design, hard ceramer coatings and computer-aided construction design, to produce a highly reflective, long lasting roadstud.

APPLICATION / SUITABILITY
The 290 stud is extremely versatile – it is suitable for use in any position, on all road surfaces. The studs are designed to be applied directly onto the road surface using 3M approved hot melt bitumen adhesive. They are also available in various colour combinations.

EFFECTIVE PERFORMANCE LIFE
Whilst the longevity of 3M 290 Roadstuds will depend on the environment and volume of traffic, they have been specifically designed for today's heavily used roads and motorways.

PRODUCT CONSTRUCTION/SPECIFICATION
3M 290 Roadstuds are manufactured from a high impact resistant polycarbonate resin. They incorporate an inner ribbed contour which is shaped to dissipate tyre impact, increase strength and reduce damage. The tough polycarbonate microprismatic reflective lens is coated with a ceramer abrasion-resistant coating.

APPLICATION SURFACE
290 Studs are suitable for application to new asphalt and concrete road surfaces and existing asphalt road surfaces.

3M™ Marker Series 290

INFO

The 3M marker series surface applied roadstud offers high performance and installed to most road surfaces without cavity cutting into the road surface.

PERFORMANCE

Refer to our Toolkit selector and Products pages for further help.

MATERIALS

High impact resistant polycarbonate resin. Incorporates an inner ribbed contour which is shaped to dissipate tyre impact, increase strength and reduce damage. The tough polycarbonate microprismatic reflective lens is coated with a ceramer abrasion-resistant coating.

RECOMMENDATIONS

The 290 will prove excellent value wherever the situation demands initial high performance combined with tight budgetary constraints. Specify P3A Surface or inset.

Benefits

- Computer aided design means the 3M 290 Stud has an excellent profile. **This reduces the effect of traffic hits and makes it extremely durable.**
- The injection moulded polycarbonate resin body has **good impact resistance** and toughness.
- The lens colour is moulded in for **good colour retention**.
- The advanced micro-cube optical design of the lenses gives **very high reflectivity**. It also seals in the reflective lenses and localises any damage.
- The lenses have a ceramer abrasion-resistant protective coating. This makes them resistant to scratching from traffic and dirt, giving **longer lasting reflectivity.**
- The inner rib contour construction **gives improved flexibility and impact resistance.**
- The finger grips on the 3M 290 Stud enable **easier and better fitting**.
- 3M 290 studs meet the requirements of traffic signs and general directions (2002) Direction 57.

England and Wales, EEC Countries contact Roadcraft Ltd: **01934 825 850**
Scotland, Northern Ireland, Irish Republic contact Fleming & Company: **0141 881 8155**
North East England contact Fleming & Company: **0191 214 5454**

www.roadstuds.co.uk

Safemark
A temporary roadstud for traffic delineation

A Tested and Certificated BSEN1463 Temporary roadstud which utilises the latest technology. Safemark combines a prismatic reflector system and fluorescent pigmented body to give maximum day and night-time visibility.

This raised all-weather marking system has been used in countless temporary traffic management schemes throughout the UK.

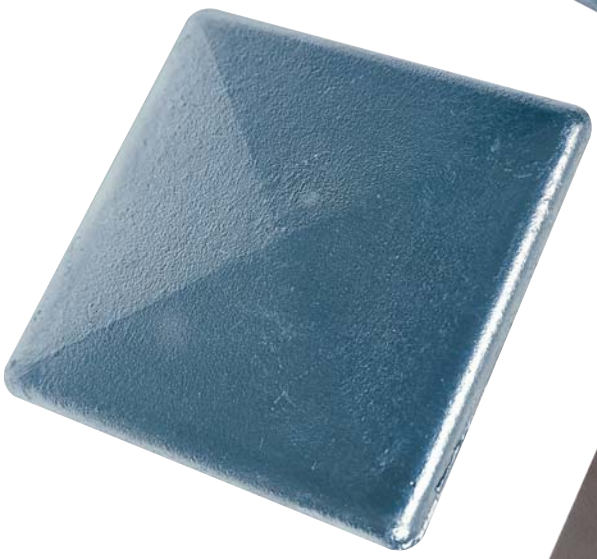
It is available in various configurations to make life simpler for contractors – the ease of installation is a big bonus in restricted traffic management situations

Safemark is available with two adhesive systems, making it suitable for most surfaces. Hot melt is recommended for use on all surfaces (though care is needed since residual marks remain after removal of studs). The self adhesive system is recommended where it is essential to avoid leaving any marks.

Pedestrian Delineation
Non Reflective Crossing Roadstuds

Pedestrian delineation roadstuds are non-reflective and are used to indicate a controlled or non-controlled pedestrian crossing area. Crossing roadstuds are cast from an approved grade of aluminium alloy or stainless steel. They are available as a round or square top profile in aluminium, or a square top in stainless steel.

The aluminium 100mm square crossing roadstuds come with a plain top, or with a raised profile to improve skid resistance in adverse weather conditions.



The stainless steel variety is only available with a square plain top.

All crossing roadstuds have a shank for anchoring into the road surface – this effectively resists any twisting movement.

- The circular aluminium 100mm diameter domed top studs are available as an alternative
- Crossing studs are installed into the road using our Hot Melt Adhesive. This is available in 25kg bags.
- Crossing studs meet the requirements of BS873 Pt. 4.

England and Wales, EEC Countries contact Roadcraft Ltd: 01934 825 850
Scotland, Northern Ireland, Irish Republic contact Fleming & Company: 0141 881 8155
North East England contact Fleming & Company: 0191 214 5454

www.roadstuds.co.uk

Toolkit Data

Our toolkit roadstud selector firstly identifies each type of roadstud definition and classification as shown in the relevant standard EN 1463.

The toolkit also includes details of the UK Traffic Signs Regulations and General Directions on the Statutory Instrument (TSRGD) 2002. This identifies particular definitions and classifications which a roadstud must legally meet for use in the UK.

Our toolkit concludes with a direct performance comparison of each roadstud in this catalogue. **The toolkit therefore gives a one chart selector towards your choice of roadstud.**

Scope and Descriptions	Definitions	Dimensions	Dimensions	Dimensions	Permanent Photometric	Temporary Photometric	Colorimetric	Temporary Daytime	Part 2 Road Testing	Scope and descriptions	Scope and descriptions
EN1463 test descriptions and introductions.	All Roadstuds product types definitions as per BSEN1463 - 1.	All Roadstuds Dimensions Height of roadstud above the road surface.	Permanent Roadstuds Max Horizontal dimensions of roadstud exposed to traffic.	Temporary Roadstuds Min Horizontal dimensions of roadstud exposed to traffic.	Permanent roadstud. Nighttime visibility. Photometric Requirements.	Temporary roadstud. Nighttime visibility. Photometric Requirements.	All Roadstuds Colorimetric requirements.	Temporary roadstud Daytime Visibility of Temporary Roadstuds.	EN1463-2 Road trials All Roadstuds. Primary Assessment.	EN1463-2 Road trials. All Roadstuds Primary Assessment.	EN 1463-2 Roadtrials Temporary Roadstuds Daytime Visibility Assessment.
EN1463-1 initial performance and EN1463-2 road test performance references.	Definitions Clause 4 Table1 Roadstud by use Table 2 Roadstud by Reflector Table 3 By design.	Clause 5 2 Dimensions Class HO not subject to traffic load.	Clause 5 2 Dimensions HD0 No performance determined.	Clause 5 2 Dimensions HDT0 no performance.	Clause 5.3.1.1 Tested in accordance to Annex A.	Clause 5.3.1.2 In accordance to Annex A.	Clause 5.3.2.	Clause 5.4.	Daytime/ Nighttime site examination. Results after clause 5.	Clauses 5.7.2 Measurement of Luminous intensity of each of 10 Roadstuds.	Clauses 5.7.2 Measurement of Luminous intensity of each of 10 Roadstuds.
EN1463 test classifications issued on completion of testing to each of the clauses.	Definitions of type by use Permanent (P) or Temporary (T) Reflector type 1,2,or 3 By Design A non depressible or B depressible.	Dimensions Classifications H1+18mm, H2 18-20mm, H3 20-25mm.	Dimensions HD1 in direction of traffic length 250mm width 190mm, HD2 320mm x 230mm.	Dimensions HDT1 in direction of traffic 35mm x 84mm, HDT2 75mm x 90mm.	Classifications PRP0 No performance PRP1 Not less than table 4.	Classifications PRT0 No performance ,PRT1 not les than table 6 ,PRT2 less than 7, OR PRT3 less than 8.	Classifications NCRO No performance or NCR1As table 9.	Classifications DCR0 No performance or DCR1 As Table 10.	Classifications S0,S1,S2,OR S3 Retension of Roadstuds at completion.	Classifications R0,R1,R2,R3,or R4 retension of reflectivity at completion.	Classifications DV0, DV1'or DV2.
UK Traffic Signs and General directions (2002). Required Roadstud classifications taken from EN1463-1-2.	All Roadstuds Product types allowed for use.	Roadstud Dimensions requirement. Height of roadstud above the road surface v Non Depressible.	Temporary Roadstud Requirement Dimensions Horizontal dimensions of roadstud exposed to traffic.	Temporary Roadstud Requirement Dimensions Horizontal dimensions of roadstud exposed to traffic.	Permanent roadstud requirement Nighttime visibility Photometric Requirements.	Temporary roadstud. Requirement Nighttime visibility. Photometric Requirements.	All Roadstuds requirements Colorimetric Requirements.	Temporary roadstud Daytime Visibility Requirements.	EN1463-2 Road trials All Roadstuds. Primary Assessment UK Requirements.	Permanent Roadstuds. Nighttime Visibility Assessment UK Requirements.	Temporary Roadstuds. Nighttime Visibility Assessment UK Requirements.
TSRGD 2002 Minimum LEGAL requirements FOR use in the UK.	**P or T 1, 2, or 3 A or B**	**H1,H2,or H3**	**HD1**	**HDT1**	**PRP1**	**PRT1**	**NCR1**	**DCR1**	**S1**	**R1'R2,R3**	**DV1**
3M 290 Surface Mounted Roadstud.	P3A	H1	HD1	N/A	PRP1	N/A	NCR1	N/A	S1	R1	N/A
3M 590 Depressible Roadstud.	P3B	H1	HD1	N/A	PRP1	N/A	NCR1	N/A	S1	R2	N/A
Roadcraft 301/290 Inset Non Depressible Roadstud.	P3A	H1	HD1	N/A	PRP1	N/A	NCR1	N/A	S1	R1	N/A
Roadcraft 301/190 Non Depressible Inset Roadstud.	P3A	H1	HD1	N/A	PRP1	N/A	NCR1	N/A	S1	R1	N/A
Safemark Temporary Roadstud Self Adhesive Type.	T2A	H1	N/A	HDT1	N/A	HDT1	CNR1	DV1	S1	R2	DV1
Safemark Temporary Roadstud Hot Melt Type.	T3A	H2	N/A	HDT2	N/A	HDT2	CNR1	DV2	S2	R2	DV2
Pedestrian Alumin Crossing Studs Plain or profile tops.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pedestrian Stainless Steel crossing studs. Studs Plain tops.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Products

Product descriptions, basic applications and further help links.

Picture	Reference	Name	Description	Size	Weight	Colours	Packaging	Application	Technical Support online or through sales office Roadcraft or Fleming
	1	301/290 roadstud base only.	Roadstud: Cast metal grey iron base without reflector. Requires 290 reflector.	Width: 142mm Length: 180mm Depth: 41mm	2.8 kgs each.	Cast Grey.	400 per pallet.	Installed using truck mounted milling machine.	www.roadstuds.co.uk
	2	301/190 roadstud base only.	Roadstud: Cast metal grey iron base without reflector. Requires 190 reflector.	Width: 142mm Length: 180mm Depth: 41mm	2.6 kgs each.	Cast Grey.	400 per pallet.	Installed using truck mounted milling machine.	www.roadstuds.co.uk
	3	3M 290 roadstud.	Roadstud reflector can be surface mounted or inset into 301 casting.	Width: 101mm Length: 89mm Depth: 16mm	8 kgs per carton.	White, red, green, yellow body and reflectors configured uni or duo reflective.	100 per carton.	Surface mounted applied or as an insert reflector for 301 casting.	www.roadstuds.co.uk
	4	3M 190 roadstud.	Roadstud reflector insert for 301 casting. Durable polycarbonate body is impact and weather resistant. Microprismatic optics provide excellent wet and dry reflectance.	Width: 97mm Length: 45mm Depth: 10mm	5.5 kgs carton.	Black polycarbonate body reflectors red, white yellow, green configured uni or duo reflective.	100 per carton.	As an insert reflector for 301 casting only.	www.roadstuds.co.uk
	5	3M 590 roadstud.	Depressible roadstud insert for use in base component.	Width: 97mm Length: 80mm Depth: 50mm	10 kgs per pack.	White, red, green and yellow reflectors configured uni or duo reflective.	50 per polythene bag.	Requires base component, manually installed.	www.roadstuds.co.uk
	6	Safemark temporary roadstud - Hot melt type.	Temporary roadstud used in traffic delineation.	Width: 97mm Length: 57mm Depth: 15mm	11.5 kgs per sack.	Fluorescent yellow body and reflectors white, red, green, yellow configured uni or duo reflective.	300 per poly sack.	Hot Melt adhesive application. Manually installed.	www.roadstuds.co.uk
	7	Safemark temporary roadstud - Self adhesive type.	Temporary roadstud used in traffic delineation.	Width: 97mm Length: 57mm Depth: 15mm	10 kgs per carton.	Fluorescent yellow body and reflectors white, red, green, yellow configured uni or duo reflective.	200 per carton.	Pre-heating of carriageway, manually installed.	www.roadstuds.co.uk
	8	Pedestrian Crossing Studs - Aluminium - Plain or Profiled.	Non reflective crossing studs used to delineate pedestrian crossings.	100mm Square Top Fishtail Shank 76mm	22.0 kgs per sack.	Silver Aluminium - Non Reflective.	100 per polypropylene sack.	Drill a hole 32mm diameter to a depth of 80mm, hot melt adhesive applied.	www.roadstuds.co.uk
	9	Pedestrian Crossing Studs - Stainless Steel - Plain.	Non reflective crossing studs used to delineate pedestrian crossings.	100mm Square Top Chisel Shank 76mm	26 kgs per sack.	Silver stainless. Non reflective.	50 per polypropylene sack.	Drill a hole 32mm diameter to a depth of 80mm, hot melt adhesive applied.	www.roadstuds.co.uk

The above chart gives a basic description of each individual product sufficient to allow a measure of customer conformity.
Further information obtained by calling: Roadcraft England and Wales +44 (0)1934 825 850 Fleming Scotland: +44 (0)141 881 8155 Fleming North East England: +44 (0)191 214 5454 or visit our website www.roadstuds.co.uk

FAQs

1. WHERE IS THE BEST PLACE TO GET HELP WHEN SELECTING A PARTICULAR ROADSTUD?
   Our general descriptions, plus the Toolkit Data, should give you what you need. Further information, however, can be obtained from our website www.roadstuds.co.uk. Or simply call our office.

2. HOW DO I QUICKLY ACQUIRE FURTHER TECHNICAL INFORMATION REGARDING CONFORMITY, SPECIFICATION AND INSTALLATION DATA SHEETS?
   Visit our website to obtain full product specification data and installation instructions or our nearest office as shown below.

3. CAN YOU MAKE A SELECTION FOR ME?
   We can certainly help. We give precise details of all our roadstuds, including the legal and compliance certification. If you give us the necessary information regarding the contract we can help you make the most suitable selection.

4. DO YOU OFFER ON-SITE SUPPORT?
   Yes, we offer full on-site support. Our team has many years of technical and practical experience.

5. DO YOU HAVE RECORDS, OVER AND ABOVE THE OFFICIAL TEST, OF HOW YOUR ROADSTUDS HAVE PERFORMED?
   Yes, we have records relating to numerous sites and can make this information available to you on request. The News section of our website also has regular updates on the latest product performance data www.roadstuds.co.uk

RoadCraft Safety Products Ltd
Unit 1 Knightcott Industrial Estate
Banwell, Weston-super-Mare
Somerset, BS29 6JN, England

T: +44 (0)1934 825 850
F: +44 (0)1934 823 106
sales@roadcraft.com

www.roadstuds.co.uk

Fleming & Company
Woodhead Road,
South Nitshill, Glasgow
G53 7NX, Scotland

T: +44 (0)141 881 8155
F: +44 (0)141 881 8268
sales@flemingandcompany.co.uk

www.roadstuds.co.uk

Fleming & Company
Unit 7B, Airport Industrial Estate
Kingston Park, Newcastle upon Tyne
NE3 2EF, England

T: +44 (0)191 214 5454
F: +44 (0)191 214 5445
newcastle.depot@flemingandcompany.co.uk

www.roadstuds.co.uk