



ENNIS-FLINT
A Traffic Safety Solutions Company

Thormajoint™

03 Bridge Jointing

Technical Information



Thormajoint™

The original proven reliable asphaltic plug joint system.

Ennis-Flint's bituminous bridge expansion joints have been developed to provide a reliable, weather resistant joint that is practically indistinguishable from the road surface. Our bridge joint systems are suitable for practically all climates and conditions, from -30°C up to +60°C tropical temperatures.

History of Thormajoint™

- Pri Thormajoint™ was the first asphaltic plug joint
- It was developed in the late 70's and early 80's by Prismo (formerly Thormack Division)
- The Midlands Links, UK (M6 Motorway) structure was one of the first major contracts for Prismo Thormajoint™
- Prismo Thormajoint™ is sold globally to Ennis-Flint licensees in over 60 countries
- Only approved and trained licensees are allowed to install Prismo Thormajoint™ system
- Ennis-Flint have manufactured and sold enough BJ200 to install thousands of joints



About Ennis-Flint

Ennis-Flint is a worldwide leader in the traffic safety and road marking industry providing quality and performance-driven solutions designed to enhance traffic safety for all users: drivers, pedestrians, cyclists and pilots.

You can find Ennis-Flint products on roads and highways, taxiways, runways, parking areas and in commercial, contractor, governmental, industrial, domestic, retail, airport and architectural settings.

With corporate headquarters in Thomasville, North Carolina and manufacturing, distribution, and sales locations occupying strategic points around the globe, Ennis-Flint does not lose sight of the fact our local relationships are what make and keep us strong.

Ennis-Flint EMEA (Europe, Middle East, Africa) is equipped to serve and exceed our customers' traffic safety and pavement marking requirements with our full range of quality products, outstanding geographic reach, and unmatched customer support with areas of expertise including, but not limited to:

- Road Markings
- Airfield Markings
- Road Studs
- High Friction Surfacing
- Bridge Expansion Joints
- Sealing and Crack Repair Systems
- Decorative Crosswalks and Traffic Calming Treatments
- Surface Graphics Systems
- Road Marking Performance Analysis
- Traffic Products
- Temporary Markings

Contact Ennis-Flint
Product Services: +44 (0) 1257 225 100
Traffic Products: +44 (0) 1761 414 824
E-mail: info@ennisprismo.com



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Prismo Thormajoint™

The proven bridge expansion joint.
The first choice for bridge engineers seeking effectiveness, economy and reliability.

Bridge expansion joints

Prismo Thormajoint™

With over 1 million linear metres installed in over 50 countries throughout the world, in conditions from Arctic to tropical, Prismo Thormajoint™ is engineered for use across all or part of the bridge deck – including verges and hard shoulders.

Ennis-Flint has developed several grades of binder to meet all climatic conditions. Based on more than 20 years experience, there is no other bridge expansion joint that can beat Prismo Thormajoint™ for effectiveness, economy and reliability.

A special combination of an elastomer modified BJ200 binder and carefully selected single size BJ stone, provide a strength and flexibility that can accommodate horizontal movements up to +/-25mm.

Prismo Thormajoint™ is a combination of an elastomer modified binder range, and a carefully selected aggregate, BJ Stone. The joint is constructed in-situ and is a hot process.

BJ200 is a special blend of bitumen, polymers, fillers and a surface active agent, formulated to combine good fluidity at process temperatures with low temperature flexibility and ambient temperature slump control. It is delivered to site in bags in its solid state, where it is heated in a special pre-heater to its normal application temperature in accordance with the manufacturer's recommendations.

BJ200 is available in a range of grades and is selected according to the climate in which the joint is to be installed. This ensures that it remains flexible even in very cold conditions but does not become too soft in very warm conditions.

BJ Stone is a single-size aggregate preferably from the Basalt, Gritstone, Gabbro or Granite groups. For the standard joint the aggregate size is 20mm to British Standard BS63. In special cases other sizes may be specified, e.g. a 14mm size in shallow joints. The use of single-size aggregate enables a high binder content to be reached and ensures a constant ratio of stone to BJ200, important to give the optimum combination of flexibility and load bearing capacity.

The stone is cleaned, sized and bagged for despatch to site. Immediately prior to use it is further cleaned by being rotated in a perforated drum mixer whilst being heated by hot compressed air to a working temperature range of 150°C – 190°C.

All joints extend the full depth of the asphalt road surfacing and waterproof membrane down to the deck concrete. In certain instances the engineer may decide that a rebate may be created in the concrete, to increase the depth of the joint to the required dimension (Table 1).

In gaps up to 30mm wide, an aluminium flashing strip spans the gap to prevent stone entering the gap during joint construction or under the punching action of subsequent traffic. For gaps over 30mm wide, a steel plate is used which also serves to distribute wheel loads across the gap (Table 2).

The joint develops a very strong bond to the concrete and to the vertical faces of the adjacent asphalt.



Specifications:

Prismo Thormajoint™ is an asphaltic plug bridge expansion joint approved by the UK Department of Transport and other road authorities around the world.

It has the following movement capabilities:

Horizontal: +/-25mm
Vertical: 3mm total

1. Binder

The binder used in the construction of an asphaltic plug joint must have the following characteristics:

- Remain flexible in cold conditions
- Be stable in hot conditions
- Be flow resistant

The following tests should be carried out by an approved laboratory at the temperatures stated, and a certificate of compliance issued in not less than 12 months before the start of the contract:

- A. Extension Test
- B. Softening Point Test
- C. Flow Resistance Test

Details of methods and test limits are available from the Ennis-Flint Technical Department.

2. Stone

The stone will be a single-sized 20mm aggregate to BS63. It shall be a clean, dry stone, pre-bagged to avoid contamination. It shall be a stone with a polished stone value of 60, and a maximum flakiness index of 25.

The information contained in this leaflet is for guidance only. Ennis-Flint reserve the right to change any of the details contained herein.

Table 1

Movement Table		
Joint Width (mm)	Joint Depth (mm)	Maximum Horizontal Movement (mm)
750	175	± 25mm
	75 - 100	± 25mm
	50 - 75	± 12mm
500	175	± 25mm
	75 - 100	± 25mm
	50 - 75	± 12mm
300	175	± 5mm
	75 - 100	± 5mm
	50 - 100	± 5mm

Table 2

