

INTRODUCTION

Tramway rails embedding and insulating solutions



The essential function of rail embedding in an urban tramway is to ensure the interface of the rail with the platform coverings. This interface also allows electrical insulation of the rail.

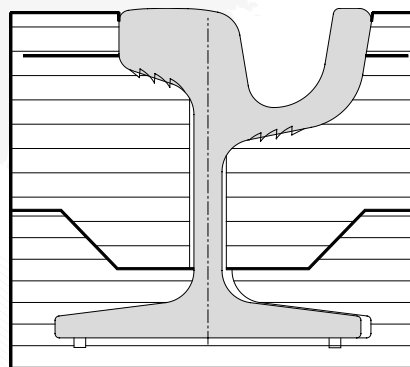
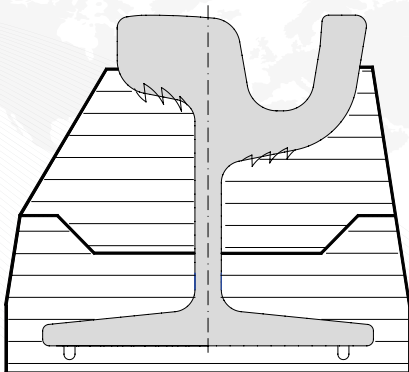
Plastiform's solutions take into account the constraints of the coverings and of the rails in the implementation and, subsequently, operation phases.

As the track is intended to last for 30 years, our products integrated into this plan are designed to ensure this interface without any changes in their performance for this duration.

To provide this guarantee, our research and development department integrates feedback and experience from over 25 years and carries out operational and maintenance tests.

These data are supplemented by simulations and measurements carried out in laboratories.

Our knowledge of the materials and results of our studies enable us to propose a customized solution adapted to each type of platform and solutions compliant with the requirements of technical specifications.



Our patented, made-to-measure systems enable adaptation to all types of laying and covering.



Plastiform's is a member of the Fédération des Industries Ferroviaires



I-1 – Description of system and references

Plastiform's designs and manufactures made-to-measure systems for embedding tram rails.

These embedding profiles consist of specific foams based on crosslinked high-density polyethylene (crosslinked HPDE foam) with the following main characteristics:

- High electrical insulation
- Water tight
- Resistance to rot and durability
- Resistance to most chemical agents, even at very high concentrations
- Fume classification F1 according to NF F 16-101, allowing to use the product in tunnels

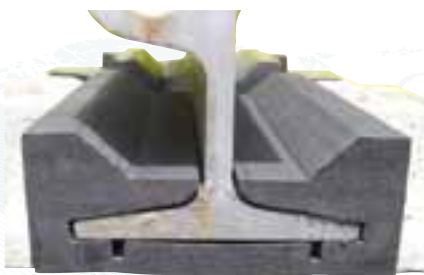
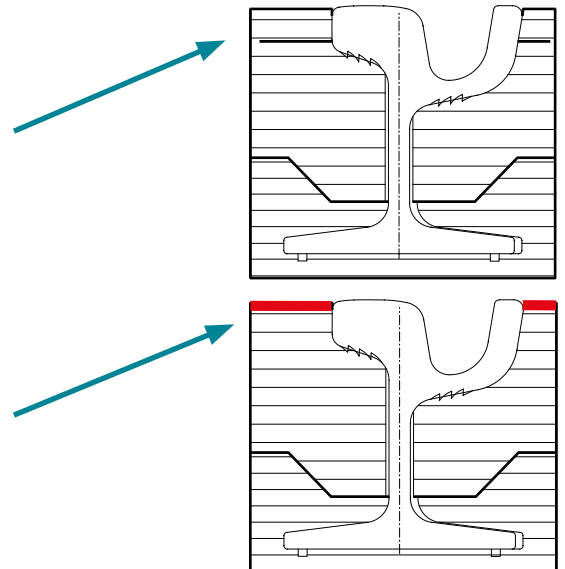
With very easy implementation (light, geometrically adapted and easy to cut), the profiles must ensure a stable and lasting interface between the rail and the various materials surrounding it and contribute to good electrical insulation of the tram rails.

The most commonly used embedding principle consists of the following elements:

- The base cladding the lower part of the rail
- The cover protecting the fastenings
- The lateral (or continuous) strips supplementing the cladding

The lateral strips can be fitted with a divisible part enabling calibration of the casting of a Polyurethane joint.

They can also have a surface reinforcement film in the upper part and are in such cases used without a joint.



1. Laying of base



2. Laying of continuous strips



3. adjusted assembly with sleeper and covering

Plastiform's has been using this process successfully for many years, and these systems have been implemented at the following sites:

2500 km of rail fitted to date

REFERENCES NOVEMBER 2014	
Town	Period
Nantes	1993-1995
	1998-2000
	2007-2009
Grenoble	1986 to present day
Rouen	1994-1996
	2009-2011-2012
Strasbourg	1996-1998
	1998-2000
	2006-2007
	2009-2010
	2013
Montpellier	1998-2000
	2006
	2010-2011
Porto (PRT)	1996-1997
Oslo (NOR)	1998-1999
Belgian Coast	1997
Bordeaux	2000-2007-2013-2014
Saint Etienne	1996
	2004-2005
Lyon	1998-2000
	2006-2007
	2008-2009
	2011-2012-2013-2014
Nice	2006-2007
Le Mans	2006-2007
Mulhouse	2004-2005
	2008-2009
Paris	2006
	2008-2009
	2010-2011-2012-2013-2014
Marseille	2007
	2008-2009-2014
Toulouse	2008-2009-2013
Reims	2009-2010
Angers	2009-2010
Brest	2010-2011
Dijon	2010-2011
Casablanca (MAR)	2011-2012
Le Havre	2011-2012
Tours	2011-2012-2013
Valenciennes	2012-2013
Besançon	2012-2013
Aubagne	2014
Cuenca (ECU)	2014

