

**Manufacturer:**  
Hilti

**Issue :** 1  
**Valid From :** 27/02/2013

**Product: X-BT Fastening System for track circuit connections**

### Product Description

This certificate is for the Hilti X-BT system for track circuit connections using either M6 or M10 connections.

### Product Image



### Scope of Acceptance

#### Full Acceptance

The Hilti X-BT fastening system for track circuit connections is to be used for track circuit connections requiring either an M6 or an M10 rail stud.

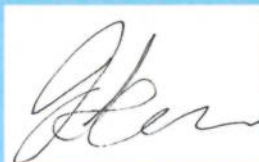
This system can be used as an alternative to Taper Pin or Cembre rail bonds.

Track circuit connection packs are available which contains all the relevant parts required for a connection using the Hilti X-BT system. These are included on certificate PA05/05623.

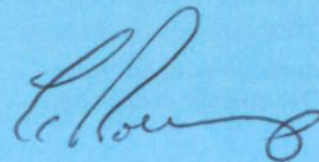
Rail jigs are also available which enable the user to drill the rail at the appropriate spacing for a moulded end or L-plate connector. These are listed on this certificate.

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.

Authorised by:



James Lewis  
Technology Introduction Manager



Edward C. Rollings MSc, CEng, MIET, FIRSE  
Professional Head, Signals & Telecommunications

**Manufacturer:**  
Hilti

**Issue :** 1  
**Valid From :** 27/02/2013

## Specific Conditions

*The following Conditions are specific to the approved product/s contained within this Certificate. These conditions must be adhered to in addition to the Network Rail General Conditions contained within the "General Terms and Conditions" section.*

*Failure to adhere to these conditions may result in the withdrawal or suspension of Acceptance of some, or all of the items contained within the accepted configuration.*

### Specific conditions of use

#### **User conditions**

1. The Hilti X-BT fastening system for track circuits is only to be used for track circuit rail bonds. It is not to be used for any other rail bond.
2. This application is limited to M6 and M10 X-BT Fasteners.
3. Installation of X-BT fasteners shall be performed according to the instructions in the X-BT Threaded Fastener specification.
4. The user shall hold the competency PTMP 14.01 (Nail Gun Equipment) and have received the DX Operator brief.
5. During installation pilot holes must be drilled before installing the Hilti stud using the specified TX-BT 4/7 step drill.
6. Studs must be installed in the neutral axis of the rail by using the appropriate jig to drill the pilot holes.
7. Studs must not be installed on an uneven surface (i.e. where the rail is embossed). This is because the stud must sit flat against the rail to allow the connectors to sit flush against the rail.
8. Studs shall not be installed within 75mm of any existing holes, welds or fishplated joints.
9. A maximum of 2 studs are permitted at any one connection point. Any new studs must be installed at least 150mm away from any existing studs.
10. A maximum number of two studs 76mm apart are permitted within any 150mm of any existing holes, welds or fishplated joints.
11. The drilled area and the pilot hole must be clear of liquids and debris before the stud is inserted.
12. After the hole has been drilled the stud must be inserted within 30 minutes. This is to prevent an oxide coating forming.
13. For rubber moulded connectors a washer must be included between the rail and the connector.
14. For L-Plate connections the order of installation on the stud shall be: washer (against the rail), plain nut, L-plate, washer and locking nut (of an approved type only).
15. M6 and M10 fasteners must both be tightened to a torque of 10Nm.
16. The X-BT system is only to be used on plain line rail which is either UIC60, 113A or Bullhead.
17. The cartridges must be stored in dry conditions and the correct disposal method followed through.

#### **Manufacturer conditions**

18. No specific conditions



**Manufacturer:**  
Hilti

**Issue :** 1  
**Valid From :** 27/02/2013

## Product Configuration

### System or Complete Assembly

<u>Part No.</u>	<u>Description</u>	<u>Catalogue No.</u>
305931	X-BT Set for M10 and M6 fastenings. Kit contains 1 DX 351 BT powder actuated fastening tool (094/019092), 1 XBT 4000A cordless drill (094/019087), 1 charger (086/046804), 2 batteries (086/046803), 1 information sheet, 1 BT cleaning kit, 1 lubricant, 3 operating instructions. Supplied in an impact resistant box.	094/019094
378266	X-BT 4000A Drill	094/019087
377608	DX 351 BT Powder Actuated Tool for M10 and M6 fastenings.	094/019092
2066459	Rail Jig for UIC60 rail. Jig to be used with the Hilti X-BT system for track circuit connections.	086/046806
2066760	Rail Jig for 113A rail. Jig to be used with the Hilti X-BT system for track circuit connections.	086/046807
2066761	Rail Jig for Bull Head rail. Jig to be used with the Hilti X-BT system for track circuit connections.	086/046808

### Maintenance Spares and Line Replaceable Units

<u>Part No.</u>	<u>Description</u>	<u>Catalogue No.</u>
377078	X-BT M10-24-6 SN12-R, M10 Stainless Steel threaded stud for use with Hilti DX Tools	094/019093
432266	X-BT M6-24-6 SN12-R, M6 Stainless steel threaded stud for use with Hilti DX tools	086/046801
377204	Brown cartridges - 6,8/11m for use with Hilti DX Tools	086/046802
SFB 185 - 370101	Spare battery for use with Hilti X-BT 4000A Drill (094/019087)	086/046803
C7/24 - 378441	Battery charger for use with Hilti X-BT 4000A Drill (094/019087)	086/046804
378676	Piston (X-351 BT P 1024) for use with Hilti DX 351 BT Powder Actuated Tool (094/019092)	086/046805
377079	TX-BT 4/7 – 80 Step Drill Bit	094/019088
377080	TX-BT 4/7 – 110 Step Drill Bit	094/019089
305931	Spall Stop	039/054330

# Certificate of Acceptance

PA05/05232

**Manufacturer:**  
Hilti

**Issue :** 1  
**Valid From :** 27/02/2013

## Assessed Documentation

<u>Reference</u>	<u>Title</u>	<u>Doc. Rev.</u>	<u>Date and Applies to Cert. issue No.</u>
U580078551-01	EBI Track ET400 Trials: Tuning unit rail fixings (Hilti XB-T)	01	21/11/12 1
-	Hilti X-BT Threaded Fastener Specification	-	December 2010 1
MOGB-SE-0056	Rail Jig 113LB Details	A	12/09/12 1
MOGB-SE-0068	Rail Jig 95LB BH	A	27/09/12 1
MOGB-SE-0069	Rail Jig 95LB BH (Cut View)	A	27/09/12 1
MOGB-SE-0066	Rail Jig UIC 60	A	24/09/12 1
MOGB-SE-0067	Rail Jig UIC 60 (Cut View)	A	24/09/12 1
-	Email: Hilti X-BT Torque	-	18/10/12 1
-	Email: Hilti studs track restrictions	-	07/02/13 1
-	Email: LPT Testing at Cosham	-	25/02/13 1
-	DX Operator Training	6.0	March 2011 1
-	X-BT example certificate of competence	-	- 1
-	Email: Hilti X-BT Rail Plant CDG approval	-	06/02/13 1
-	Email: Hilti X-BT competence requirements	-	20/12/12 1

## Certificate History

<u>Issue</u>	<u>Date</u>	<u>Issue History</u>
1	27/02/13	First accepted for use

## Key Contacts

### Manufacturer

Colin Burnikell  
Hilti (Gt. Britain) Limited  
1 Trafford Wharf Road  
Trafford Park  
Manchester  
M17 1BY  
Colin.burnikell@hilti.com

### Sponsor

Simon Marshall  
Network Rail  
Infrastructure Maintenance Improvement Specialist  
Simon.marshall@networkrail.co.uk



**Manufacturer:**  
Hilti**Issue :** 1  
**Valid From :** 27/02/2013**General Terms & Conditions****1) General**

- 1) This certificate can only be amended by Network Rail Technology Introduction Group. Any alterations made by a different person will invalidate the entire certificate.
- 2) Failure to abide by the requirements in this Certificate of Acceptance may invalidate the certificate, thereby restricting the right to operate the product and / or limiting the future supply and deployment of the product on the infrastructure.
- 3) Upon the review date this certificate and the product it relates to is invalid and not accepted for use. Manufacturers are to make an application for a review prior to the review date.

**2) Manufacturer**

The Manufacturer shall:

- 1) Ensure that all products supplied comply with the standards defined in the Acceptance Requirements or otherwise documented as part of the assessment, including meeting the reliability requirements included in the Acceptance Requirements and in any deed of warranty for the relevant certificate number.
- 2) Notify Network Rail Technology Introduction Group:
  - a. Within 48 hours, of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed).
  - b. Of any intended change to the accepted product; changes include:
    - i. a change to the product configuration (to the actual product or its application);
    - ii. a variation to or addition of manufacturing locations or processes;
    - iii. a change in the name or ownership of the manufacturing company;
    - iv. any changes to the ability or intention to support with technical services, spares or repairs.
- 3) The Manufacturer shall provide Network Rail Technology Introduction Group at least 12 (twelve) months notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to the Network Rail Technology Introduction Group.
- 4) Provide further copies of operating and maintenance manuals to purchasers / users of the product as necessary (including certificates of conformance, calibration etc).
- 5) Provide further copies of training manuals and an appropriate level of training to purchasers or users of the product as necessary.
- 6) Where applicable, specialist technical support, repairs and servicing of the product shall be carried out by the Original Equipment Manufacturer (OEM) or authorised agent only.
- 7) Network Rail may request information from the manufacturer to prove product compliance with clauses 1 and 2 above and reserve the right to suspend and/or withdraw any application where information is not forthcoming within a reasonable timeframe.
- 8) In accordance with Network Rail's Quality Assurance Policy Statement 2011, where the specification and/or Product Acceptance Certificates specify quality assurance classifications (QA1 to QA5) for the products, the manufacturer shall comply with the specified level of quality assurance for each product and allow Network Rail access to carry out its quality assurance checks.
- 9) The manufacturer shall give Network Rail's representatives access at all reasonable times to its premises and allow them to inspect its quality systems and production methods and, if requested, to inspect, examine and test the products both during and after their manufacture and the materials being used in their manufacture.

**3) Conditions of Use**

Specifiers, installers, operators, maintainers, etc. using the product shall:

- 1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Technology Introduction Group.
- 2) Check that the application of use complies with the relevant certificate's scope of acceptance.
- 3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Technology Introduction Group.
- 4) Inform Network Rail Technology Introduction Group in writing of a change to the product configuration (or to the actual product or its application).
- 5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.
- 6) Be appropriately trained and authorised for the installation, maintenance and use of the product.
- 7) Only send products for repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.
- 8) Users are to be aware that Product Acceptance is not a substitute for design approval.

**Manufacturer:**  
Hilti

**Issue :** 1  
**Valid From :** 27/02/2013

#### 4) Compliance

Railways and Other Guided Systems (ROGS) Regulations

- 1) Where the product is to be used in areas where Network Rail is not the Infrastructure Manager (e.g. leased stations), the sponsor shall additionally obtain formal consent from the Infrastructure Manager for the locality where the equipment is to be installed. This may include a requirement for additional safety verification. The decision of that Infrastructure Manager is binding, and cannot be overridden by Network Rail except by the escalation processes established in the ROGS regulations
- 2) As required in Railway Group Standard GE/RT8270, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:
  - a. All rail vehicle types that have access rights over the area affected by the change
  - b. Infrastructure managed by others
  - c. Neighbours.

Railway Interoperability Regulations

- 3) For interoperable constituents of systems the project or group responsible for installation and commissioning shall be required to demonstrate compliance with the relevant Technical Specifications for Interoperability (TSI) where appropriate.
- 4) An authorisation from the national safety authority (i.e. the Railway Safety Directorate of the Office of Rail Regulation) is required before the equipment is to be used in revenue earning service.

#### 5) Supply Chain Arrangements

- 1) Certificates of acceptance do not imply any particular quantity of supply nor any exclusivity of supply.
- 2) Products may be purchased by Network Rail or its agents, suppliers or contractors.
- 3) Manufacturers should note that it is not necessary to enter into any exclusive supply arrangements with resellers or other suppliers