RAMCO HARD WORKER

BONDING AGENT EPOXY HW403

Solvent-free, two-part epoxy bonding agent for structural applications

TECHNICAL DATA SHEET

Product Description

Hard Worker Bonding Agent Epoxy HW403 is a solvent-free, two-part epoxy bonding system for structural applications. It provides excellent adhesion between old and new concrete and between concrete and steel, delivering consistent performance, high pull-out strength and an extended pot life for high-demand construction and repair work.

Features

- Solvent-free, low-odour system
- High bond strength between old and new concrete
- Pre-batched two-part system for consistency and ease of use
- Bonds to concrete, steel, tiles, bricks and glazed surfaces
- Extended pot life for larger placements

Uses

- Bonding new concrete or toppings over hardened concrete
- Bonding concrete to steel reinforcement, tiles, bricks and similar substrates in structural repairs

Surface Preparation

Ensure substrates are dry, sound and free from grease, oil, coatings and loose particles. Mechanically roughen concrete surfaces to an open texture for maximum grip. Blast-clean steel surfaces to remove all rust and scale, and vacuum thoroughly before applying the epoxy.

Mixing Instructions

Mix 3 parts resin (Part A) with 1 part hardener (Part B) by volume, using a low-speed stirrer for at least 3 minutes until a uniform colour and texture is achieved. Avoid entraining air, and stir slowly for a further minute before use. Prepare only the quantity that can be applied within the pot life.

Applications

Apply the mixed material with a stiff brush, ensuring even and complete coverage of the prepared surface. Place the fresh concrete while HW403 is still tacky; if the epoxy film loses tackiness or becomes glossy, apply a fresh coat before proceeding. Avoid interruptions and cold joints by ensuring continuous concrete placement immediately after the bonding coat.

Limitations

Apply only on dry, properly prepared surfaces, and do not dilute. Do not apply if the surface or ambient temperature is below +5°C or above +35°C.

Technical Properties

Property	Typical Result
Appearance	**Liquid**
Colour	**Part A – Clear Part B – Yellowish**
Mixing Ratio (A : B)	**3 : 1 by volume**
Tackiness Time	**3-5 hrs**
Pot Life	**45 – 60 minutes**

Performance Parameters

Property	Value
Reinforcement Pull-out Strength, 28 days (20 mm dia)	**210 kN**
Flexural Strength, 7 days (ASTM C 580)	**42 – 43 MPa**
Slant-Shear Bond Strength, 28 days (ASTM C 882)	**15 – 16 MPa**

All values tested under standard laboratory conditions.

Coverage

Approximately 15–20 sq. ft. per litre per coat. Actual coverage depends on the texture and porosity of the substrate.

Package

Available in 4-litre kits (Part A – 3 L; Part B – 1 L).

Shelf Life

Shelf life of 12 months from the date of manufacture in sealed packs stored between +5°C and +30°C in a dry, shaded location.

Important Note

Do not dilute HW403, and ensure continuous concrete placement while the bonding coat is still tacky.

Precautions and Safety

Avoid contact with skin and eyes and do not inhale vapours. Wear gloves, goggles and protective clothing. Clean tools immediately after use with a suitable thinner; cured material can only be removed mechanically.

Additional Information

The Hard Worker range includes a comprehensive selection of concrete repair and construction chemical products — precision and anchoring grouts, repair mortars and micro-concretes, epoxy and SBR bonding agents, integral and surface waterproofing systems, tile adhesives and grouts, block-fixing mortars and admixtures. Separate technical data sheets are available for each product.

Technical Support

All values provided are tested under controlled laboratory conditions; performance may vary depending on site conditions and workmanship. For site-specific recommendations, technical data, or detailed guidance, contact the Hard Worker Technical Services Team at:

Toll-free number 1800 202 5700

Email customercare@ramcocements.co.in

The Ramco Cements Limited
Auras Corporate Centre, V Floor, 98-A, Dr.Radhakrishnan Salai,
Mylapore, Chennai, Tamil Nadu - 600 004