

REC FLEX PU200 HP

HIGH JOINT MOVEMENT ACCOMMODATION, TWO COMPONENT, POLYURETHANE JOINT SEALANT FOR WATER RETAINING STRUCTURES

DESCRIPTION

REC FLEX PU200 HP is a two-part, gun grade, slump resistant elastomeric polyurethane sealant specially formulated for sealing joints in all water retaining structures. It is highly resistant to bio degradation by both aerobic and anaerobic bacteria, which makes **REC FLEX PU200 HP** particularly well suited to sewage treatment and storage plants.

PRIMARY APPLICATIONS

Sealing movement and static joints in water retaining structures, especially in applications likely to be subjected to biological degradation such as:

- Sludge digestion tanks
- Sewerage and water treatment plants
- Filtration and aeration tanks
- Water reservoirs

FEATURES/BENEFITS

- Resistant to bacteriological attack
- Slump resistant - suitable for vertical joints
- Abrasion resistant
- Excellent adhesion to primed substrates
- High joint movement accommodation
- Two component - predictable, even cure rate
- Long track record in demanding environments

STANDARDS

REC FLEX PU200 HP complies with the following standards: ASTM C 920

TECHNICAL INFORMATION

REC FLEX PU200 HP	2-part compound in paste form	
Pot life (working life) at 23°C	2 hours	
Cure time at 23°C	Initial Cure	Full Cure
	24 hours	14 days
Color	Grey	
Specific gravity	Approximately 1.3	
Solids content	100%	
Application temperature	5°C - 50°C	
Service temperature	-40°C to + 80°C	
Water immersion	Must be fully cured before immersion.	
Shore A Hardness	25	
Movement accommodation factor	Maximum 60% for butt joints (±30%)	
Flammability	Burns, but does not readily support combustion. Note that toxic fumes may be generated if product is burned	
Chemical resistance	Resistant to dilute acids and alkalis to occasional spillage and	

	aliphatic solvents (Av gas, petrol etc.) Not resistant to aromatic or oxygenated solvents.
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DESIGN CRITERIA

REC FLEX PU 200 HP is designed for use in water retaining structures and may be applied to joints between 20 mm and 50 mm wide. Joints should be designed to accommodate the anticipated movement due to thermal changes, hydro static forces and any other factors. To cope with the hydro static pressures the joint sealant depth should be a minimum 20mm to ensure sufficient bond to the joint faces. Joint width to depth ratio should never exceed 1:1. The depth should never be greater than the width.

Typically, joints in water retaining structures will be 20mm

(W) x 20mm (D) up to 50mm (W) x 25mm (D)

When joint sizes are outside these parameters, consult with TECHNICAL DEPARTMENT OF RECKON CHEMICALS PVT LTD, LAHORE for specific advice.

MOVEMENT ACCOMMODATION FACTOR (MAF)

Joints expected to withstand repeated or cyclical movement or extremes of heat, chemical attack or physical abuse should be designed and spaced so that total joint movement under tension and compression does not exceed +/- 30% (total 60%) of the joint width at time of sealing. The total movement in shear should not exceed 50% of joint width at time of sealing in these joints.

BOND BREAKER TAPE AND JOINT FILLERS

Joints subject to hydro static pressure must have the sealant supported by a sound, rigid RECKON BACKING ROD and must incorporate a suitable REC WATER STOP. Do not use backing materials which will bleed oils, solvents or bitumen. A self- adhesive polyethylene bond breaker tape must be used to prevent adhesion of **REC FLEX PU200 HP** to the back of joint or to joint fillers and thus allow optimum sealant performance. Under no circumstances should duct tape, masking tape or any other tape be used apart from a polyethylene tape (See application example below for uses of backing materials).

PRIMING

Priming is essential on all surfaces to assure a sound bond between substrate and sealant and ensure that optimum movement capability and aging characteristics are realized.

JOINT PREPARATION

Ensure that joint dimensions are as specified, and that anticipated joint movement is within the capability of the Movement Accommodation Factor of **REC FLEX PU200 HP**. Concrete should have been allowed to cure for at least 28 days. Remove all dirt, dust, laitance and loose material from concrete by vigorous wire brushing or grinding. Remove all rust, scale and protective coating from metal surfaces, and clean off any oil or grease using REC CLEANER. Joint faces in concrete must be sound, flat and free of surface irregularities and completely dry, clean and frost free. Be wary of any excess moisture in the bottom of the joint i.e. from any expansion joint fillers or ponding of water, it is imperative the joint must be completely dry prior to application of the primer and sealant, the applied primer must not be exposed to any moisture prior to the application of the sealant itself. Any joint faces which do not meet these requirements may require forming of a fresh joint surface by saw cutting or refacing with a suitable epoxy mortar. For a particularly neat finish, cover the face edges of the joint with masking tape before priming. Prime joint as detailed below, inserting bond breaker and/or backing material when appropriate.

PRIMING MASONRY SURFACES

Use REC PRIMER. This is a two-part epoxy surface primer with exceptionally good hydrolytic stability which ensures good adhesion of **REC FLEX PU 200 HP** to the substrate under prolonged submerged conditions. The ambient and substrate temperature needs to be above 5°C before and after the application of the primer.

Mix the two components of the primer by pouring the Hardener component into the Resin component, mix thoroughly for a minimum of one minute by stirring with a spatula, paint stirrer etc. Apply an even coat of primer by brush onto the bonding faces of the concrete, the base of the joint should have no primer residue present after the primer has been applied, then allow the primer to become touch dry before applying any sealant (typically 1 hour at 23°C). DO NOT APPLY SEALANT TO TACKY OR WET PRIMER. The sealant must be applied within 8 hours at normal temperatures - within 3 hours at elevated temperatures (above 30°C). The pot life (usable life) of mixed REC PRIMER is 30 minutes at 23°C and 20 minutes at 30°C. Any unused mixed REC PRIMER should be discarded after the pot life has expired.

MIXING

To facilitate proper mixing in cold weather, it is recommended that **REC FLEX PU200 HP** be stored for at least 12 hours at approximately 20°C prior to mixing. Thorough even mixing is essential to ensure proper cure. Mix only entire units to ensure correct proportions. During mixing ensure entire contents are fully mixed, paying particular attention to the sides and bottom of the tin. Avoid air entrapment caused by bringing the blade too close to the surface. Transfer all of Curing Compound into the Base tin. Hold the tin firmly and mix thoroughly using ONLY the recommended mixing paddle fitted into a heavy duty, low speed drill (300-500 rpm) until sealant color is uniform and streak free. For mixing material use a small mixing paddle (PC 770164), or large mixing paddle (PC 770163). Mix for 3 minutes then scrapes down sides of tin. Mix for a further 3 minutes, total mixing time should be a minimum of 6 minutes. Be wary of excessive high-speed mixing as high speed mixing may entrain air into the mixed material which may intern cause air voids in the joint. Incorrect mixing can adversely affect cure and final properties.

GUN LOADING

Ensure that the surface of the sealant is reasonably concave to prevent air pockets. Place the relevant follower plate on top of the sealant and load by direct filling of a RECKON Gun or into empty cartridges.

APPLICATION

Hold the nozzle against the joint, and inject sealant firmly into the joint extruding the bead in front of the gun to minimize voids. Wipe the nozzle occasionally to ensure a clean extrusion.

TOOLING

To gain adequate surface contact between sealant and substrate and to eliminate air voids, tool sealant to a smooth finish with a slightly convex trowel. Remove masking tape if used.

CLEANING

Clean up uncured material and equipment immediately after use using REC CLEANER. Do not use solvents on skin. Wash hands thoroughly with industrial cleaner.

LIMITATIONS

Not recommended for post-tensioned joints, or for use in highly chlorinated water such as in swimming pools. For advice on sealing such structures, contact technical department of RECKON CHEMICALS PVT Ltd Lahore. Do not apply **REC FLEX PU200 HP** to any material containing mobile bitumen, nor allow bitumen to contact **REC FLEX PU200 HP**. If likely to be in contact with other organic materials not specifically designed to be used with **REC FLEX PU200 HP**, RECKON CHEMICALS PVT LTD., recommends initial testing to ensure compatibility.

QUANTITIES

The table below gives some typical values:

Joint Size		Usage
Width	Depth	Meters of joint / 6-liter unit
20	20	15
30	20	10
40	20	7.5
50	25	4.8

PRIMER QUANTITIES

250 ml of REC PRIMER for about 6 liters of **REC FLEX PU200 HP**.

A simple formula can be used to calculate the amount of **REC FLEX PU200 HP** required to seal a joint of known dimensions:

$$N = L \times W \times D$$

Where, N = number of liters

L = length of joint in meters

W = width of joint in meters

D = Depth of joint in millimeters

FOR EXAMPLE: If L = 10m, W= 0.02m, D = 20 mm

$$N = 10 \times 0.02 \times 20 = 4 \text{ liters}$$

NOTE: Exact quantities required will vary according to substrate condition.

PACKAGING

REC FLEX PU 200 HP is available in 6kg, 20 kg and 30 kg packs.

STORAGE

REC FLEX PU 200 HP have a shelf life of 12 months from date of manufacture if stored at temperatures between 2°C and 35°C. If these conditions are exceeded, Reckon Technical Department should be contacted for advice.

SAFETY

Use appropriate personal protective equipment during mixing and application, including suitable gloves and eye protection. Provide adequate ventilation during application and cleaning.

QUALITY STATEMENT

All our products are manufactured to comply with our internal QA/QC program and quality management system to ensure consistency and quality.

DISCLAIMER

While the company guarantees its products against defective materials, the use and application of these products are made without guarantee since the conditions of their application are beyond its control. It is recommended to verify with the company that the product is suitable for the intended use. This Data Sheet version is the latest one. The company may modify it without any prior notice. Technical characteristics are listed for guidance only. For more information, please contact the company's head office located in Lahore.

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