

DENKA PRETASCON TYPE-1R

High performance, cementitious non-shrinking grout

1 Description

DENKA PRETASCON TYPE-1R is a pre-mixed non-shrinking dry mortar that has been developed as a grouting material. The grouting material is prepared by mixing the dry mortar with water. As a grouting material, DENKA PRETASCON TYPE-1R has high flowability, and can be injected to fill spaces without void formation.

2 Advantages

- Keep excellent fluidity and filling performance at even high temperature
- Excellent for pumping, does not segregate
- Non-bleeding and non-shrinking
- Good bonding with structures after placement
- Development of high compressive strength early on, and maintenance of this with aging
- Excellent durability

3 Where to Use

- Machinery foundations
- Bridge bearing plates
- Steel structure foundations
- Underpinning
- Anchor bolt

4 Packaging

- 25-kg plastic bags

5 Mixing proportions

Standard mixing proportions

Quantity mixed	DENKA PRETASCON TYPE-1R	Water
Per bag (13.3 L)	25 kg	4.5 kg
Per 1 m ³	1875 kg	338 kg

Quantity of water can be adjusted between 4.2–4.9 kg/bag (316–368 kg/m³)

6 Mixing

- Mixing can be carried out using a high speed mixer or a hand mixer with an agitating blade that rotates at 900 rpm or more.
- The mixing time is 1–2 min.

7 Technical data

Temperature (°C)	Mass of water (kg/bag)	Bleeding ¹⁾ (%)	Expansion ²⁾ (%)	Setting properties ³⁾ (h:m)		Compressive strength ⁴⁾ (MPa)			
				Initial	Final	1day	3day	7day	28day
25±2	4.5	0.0	0.54	4-45	7-00	31.5	46.7	57.3	66.0
30±2	4.4	0.0	0.63	4-00	6-00	44.1	56.5	61.8	69.6
35±2	4.4	0.0	0.70	3-45	5-30	46.2	57.8	62.1	70.3

- 1), 2) Test method for bleeding ratio and expansion ratio of grout for prestressing bar (vessel method) (Draft) JSCE-F 533-2007
 3) Test method for setting time of concrete mixtures by penetration resistance JIS A 1147
 4) Standard Test Method for Compressive Strength of Hydraulic Cement Mortars ASTM C 109
 5) Test method for flowability of filling mortar (Draft) JSCE F 541-2010

(JIS: Japan Industrial Standard)
 (JSCE: Japan Society of Civil Engineers)

8 Precautions for handling

- Refer to Material Safety Data Sheet (MSDS) before use
- Use a stainless steel or iron agitating blade. Do not use an aluminum blade because hydrogen gas generation could occur and subsequently lead to explosions when mixing the mortar
- Mix grouting material with the specified quantity of water. Using other quantities of water may affect the performance of the non-shrinking mortar
- Use fresh water that does not contain oils, salts, or organic compounds
- Before beginning injecting work, optimize the quantity water in mixing trials and remove oily residues, laitance, and mud from the surface of structure
- Protective gear (goggles, mask, gloves, and rubber boots) should be worn during handling
- Do not dispose of DENKA PRETASCON TYPE-1R in drains
- Product in open bags should be used up completely or the bag should be resealed for storage
- The product should be stored in a dry area, indoors, and out of direct sunlight
- For further information, please contact DENKA.

9 Limitation of liability

- The information contained in this document is general advice for potential customers of DENKA about the basic properties and characteristics of various DENKA products (hereafter referred to as "the Product Information"). DENKA makes no warranty or representation as to the entire accuracy or completeness of the Product Information in this brochure.
- Nothing in this brochure will be deemed to create any express or implied warranty or obligation of DENKA with respect to the Product Information or its use, including, but not limited to, any warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property rights.
- Each user of the Product Information and DENKA products assumes their own responsibility to properly determine the manner and suitability of use of the Product Information and DENKA products in its own operations. The user should exercise proper care in considering the Material Safety Data Sheet, Product Information and any other technical information provided by DENKA, including descriptions of conditions of use, warnings, and cautionary instructions.
- DENKA reserves the right to change the Product Information from time to time at its discretion and without notice.

<DENKA ADVANTECH PRIVATE Ltd >
 TEL: +65-6321-9530 FAX: +65-6224-3840
 <DENKA CHEMICALS HONG KONG Ltd >
 TEL: +852-3691-8636 FAX: +852-2180-6929

<DENKI KAGAKU KOGYO K.K. >
 Special Cement Additives Department
 TEL: +81-3-3507-5465 FAX: +81-3-3507-5085

DENKA PRETASCON TYPE-1R

App - 1 Test results by a public laboratory

These test results were measured in accordance with ASTM C 1107 (Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink))

1) Compressive strength

Compressive Strength		Performance requirement	Test result
Compressive strength, minimum (MPa)	1 d	7.0	44.1
	3 d	17.0	64.3
	7 d	24.0	70.4
	28 d	34.0	83.5

2) Non-shrinking properties

Expansion		Performance requirement			Test result		
		Grade A	Grade B	Grade C	Grade A	Grade B	Grade C
Early height change, Final set (%)	Max	+4.0	NA	+4.0	+0.3	—	+0.3
	Min	0.0	NA	0.0			
Height change of moist cured hardened grout at 1, 3, 14 and 28 d (%)	Max	NA	+0.3	+0.3	0.0	1 d 0.0	1 d 0.0
	Min	0.0	0.0	0.0		3 d 0.0	3 d 0.0
						14 d 0.0	14 d 0.0
						28 d 0.0	28 d 0.0