



# ISO 13007 Classifications

## TDS 137

Recently, the tile and stone industry has seen a push to establish a common performance standard for tile adhesives and grouts covering the entire world; ISO 13007. The goal of ISO 13007 is to establish a product classification code to quickly and easily tell an architect, specifier, tile contractor or distributor exactly how a product is designed to perform. ISO 13007 is essentially a combination of European, British and American standards brought together with a common focus; the need for an International Standard. Please note that the ISO standards are currently used in multiple countries around the world; however, the ANSI standards remain the reference standard for North America.

This standard requires that an adhesive pass certain minimum performance tests before it may be accredited with a Performance Classification. This Performance Classification is expressed as letters and numbers in an easy-to-use and understand code.

**Tile adhesives** are classified as follows;

- A. Types of Adhesives;
  - 1. Cementitious Adhesives **C**
  - 2. Dispersion Adhesives **D**
  - 3. Reaction Resin Adhesives **R**
- B. Classes of Adhesives
  - 1. Normal Adhesive **1**
  - 2. Improved Adhesive **2**
- C. Characteristics of Adhesives (optional)
  - 1. Fast-Setting/Drying Adhesive **F**
  - 2. Slip-Resistant Adhesive **T**
  - 3. Extended Open Time Adhesive **E**
  - 4. Exterior Glue Plywood Adhesive **P**
  - 5. Deformable Adhesive **S**

For each type of adhesive, it is possible to have one of two classes, and different optional characteristics of the adhesive based on performance. The designation of the adhesive consists of the letter for the adhesive type (C, D or R), followed by the number of the class (1 or 2), and/or the corresponding letter for the characteristic(s) of the adhesive (F, T, E, P & S). For a better understanding of ISO 13007-1 Adhesives please refer to the chart below;

TYPE	CLASS	CHARACTERISTIC	DESCRIPTION
C	1		Normal cementitious adhesive (C1)
C	1	F	Fast-setting adhesive (C1F)
C	1	T	Normal cementitious adhesive with slip-resistance (C1T)
C	1	FT	Fast-setting cementitious adhesive with slip-resistance (C1FT)
C	2		Cementitious adhesive with improved characteristics (C2)
C	2	E	Cementitious adhesive with improved characteristics and extended open time (C2E)
C	2	FP2S1	Fast-setting cementitious adhesive with improved characteristics, improved performance on exterior glue plywood and deformable (C2FP2S1)
C	2	T	Cementitious adhesive with improved characteristics and slip-resistance (C2T)
C	2	TE	Cementitious adhesive with improved characteristics, slip-resistance and extended open time (C2TE)
C	2	FT	Fast-setting cementitious adhesive with improved characteristics and slip-resistance (C2FT)
D	1		Normal dispersion adhesive (D1)
D	1	T	Normal dispersion adhesive with slip-resistance (D1T)
D	2		Dispersion adhesive with improved characteristics (D2)
D	2	F	Fast-drying dispersion with improved characteristics (D2F)
D	2	T	Dispersion adhesive with improved characteristics and slip-resistance (D2T)
D	2	TE	Dispersion adhesive with improved characteristics, slip-resistance and extended open time (D2TE)
R	1		Normal reaction resin adhesive (R1)
R	1	T	Normal reaction resin adhesive with slip-resistance (R1T)
R	2		Reaction resin with improved characteristics (R2)

R	2	T	Reaction resin with improved characteristics and slip-resistance (R2T)
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Note: The above mentioned designations are not all of the possible combinations. Additional designations can be inserted according to the combination of the different symbols for the characteristics. For example, C2TES1 is a deformable cementitious adhesive with improved characteristics, slip-resistance and extended open time.

Now that we know what the performance classification codes designate it is important to know exactly what each code designation means. The following terms and definitions can help clarify what it all means.

**Cementitious Adhesive (C)** – mixture of hydraulic binding agents (e.g. portland cement), aggregates, and organic additives (e.g. latex polymers, moisture retention additive, etc...) to be mixed with water or latex admix before mixing

**Dispersion Adhesive (D)** – ready-to-use mixture of organic binding agents in the form of an aqueous polymer dispersion, organic additives and mineral fillers –mastic type products.

**Reaction Resin Adhesive (R)** – single or multi-component mixture of synthetic resin, mineral fillers and organic additives in which curing occurs by chemical reaction – epoxy or urethane based products.

**Class 1 (1)** – means the adhesive has passed the minimum pass level tests that are mandatory for that adhesive type.

**Class 2 (2)** - means the adhesive has passed the same tests as Class 1 and/or other applicable tests, but at higher pass levels.

**Extended Open Time (E)** – maximum time interval after application at which tiles can be embedded in the applied adhesive and meet tensile adhesion strength requirement must be  $\geq 30$  minutes. This designation does not apply to reaction resin adhesives (R).

**Slip-Resistance (T)** – the downward movement of a tile applied to a combed adhesive layer on a vertical surface must be  $\leq 0.5\text{mm}$  for a C or D adhesive, and  $\leq 5\text{mm}$  for a type R adhesive.

**Fast-Setting (F)** – adhesive with accelerated cure time that must achieve the minimum strength requirements of a fast-setting adhesive. This designation does not apply to reaction resin adhesives (R).

**Exterior Glue Plywood (P)** – adhesive with the ability to bond tile or stone to exterior glue plywood substrates (interior only). This designation does not apply to reaction resin adhesives (R) or dispersion adhesives (D).

**Deformability (S)** – capacity of a hardened adhesive to be deformed by stresses between the tile and the substrate without damage to the installed surface – to pass S1 requirements an adhesive must be able to deform  $\geq 2.5\text{mm}$  but  $< 5\text{mm}$ ; to pass S2 requirements an adhesive must be able to deform  $\geq 5\text{mm}$ . This designation does not apply to reaction resin adhesives (R) or dispersion adhesives (D).

The stand alone designations are separate from the main designation. For example; a cementitious adhesive that has improved characteristics, is fast-setting and has slip resistance would get a designation of C2FT. If that same adhesive is highly deformable it would get an S2 designation, and, if it has improved performance bonding to exterior glue plywood it would get a P2 rating. So, the result would be 3 separate designations; **C2FT S2 P2**.

**Tile grouts** are also classified with ISO designations which are slightly different from the adhesive categories;

A. Types of Grouts;

1. Cementitious Grouts **CG**
2. Reaction Resin Grouts **RG**

B. Classes of Cementitious Grouts

1. Normal Grout **1**
2. Improved Grout **2**

C. Characteristics of Cementitious Grouts (optional)

1. Fast-Setting/Drying Grout **F**
2. High Abrasion Resistance Grout **A**
3. Reduced Water Absorption Grout **W**

For cementitious grouts, it is possible to have different classes, and different optional characteristics of the adhesive based on performance. The designation of the grout consists of the letter for the grout type (CG or RG), followed by the number of the class (1 or 2) for cementitious grouts only, and/or the corresponding letter for the characteristic(s) of the adhesive (F, A, W). For a better understanding of ISO 13007-3 Grouts please refer to the chart below;

TYPE	CLASS	CHARACTERISTIC	DESCRIPTION
CG	1		Normal cementitious grout (CG1)
CG	1	F	Fast-setting grout (CG1F)
CG	1	A	Normal cementitious grout with high abrasion resistance (CG1A)
CG	1	FA	Fast-setting grout with high abrasion resistance (CG1FA)
CG	2		Cementitious grout with improved characteristics (CG2)
CG	2	F	Fast-setting cementitious grout with improved characteristics (CG2F)
CG	2	FA	Fast-setting cementitious adhesive with improved characteristics and high abrasion resistance (CG2FA)
CG	2	FAW	Fast-setting cementitious adhesive with improved characteristics, high abrasion resistance and reduced water absorption (CG2FAW)
RG			High performance reaction resin grout (RG)

Note: Again, the above mentioned designations are not all of the possible combinations. Additional designations can be inserted according to the combination of the different symbols for the characteristics. For example, CG1W is a normal cementitious grout with reduced water absorption.

Now that we know what the performance classification codes designate it is important to know exactly what each code designation means. The following terms and definitions can help clarify what the grout designations mean.

**Cementitious Grout (CG)** – mixture of hydraulic binding agents (e.g. portland cement), aggregates, inorganic and organic additives (e.g. latex polymers, moisture retention additive, etc...).

**Reaction Resin Grout (RG)** – single or multi-component mixture of synthetic resin, mineral fillers and organic additives in which curing occurs by chemical reaction – epoxy or urethane based products.

**Class 1 (1)** – means the grout has passed the minimum pass level tests that are mandatory for cementitious grouts.

**Class 2 (2)** - means the cementitious grout has passed the same tests as Class 1 and/or other applicable tests, but at higher pass levels.

**Fast-Setting (F)** – grout with accelerated cure time that must achieve the minimum compressive strength requirements under normal conditions within 24 hours. This designation applies only to cementitious grouts (CG).

**Reduced Water Absorption (W)** – grout has lower water absorption rate than standard cementitious grout. This designation applies only to cementitious grouts (CG).

**High Abrasion Resistance (A)** – the capability of a grout to resist wear. This designation applies only to cementitious grouts (CG).

Reaction resin grouts have only one designation; RG.

For a complete copy of ISO 13007 please visit [http://www.iso.org/iso/iso\\_catalogue](http://www.iso.org/iso/iso_catalogue).

Technical Data Sheets are subject to change without notice. For latest revision, check our website at [www.laticrete.com](http://www.laticrete.com)  
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