

CapGrout® GP

Expandable Grout based on Portland cement

CapGrout GP is a powder product containing cement, suitable aggregates, plasticizing admixtures, and expandable material that is used to fill the pores and joints up to 10 cm in thickness completely. This product has high strength in all ages as well as filling the joints and pores at the beginning of the setting due to the expanding property.

This product is produced based on the general requirements of the Iran National Standard No. 18644. Also, this grout meets the requirements of the ASTM C1107 standard.

The physical and chemical properties of CapGrout GP are according to the following table and produced in the allowable changing range of Iran National Standard No.18644.

Physical State	Powder
Color	Grey
The Specific Weight of the Powder	1/65 ± 0/05 g/cm ³
The Specific Weight of the ready mortar	2/23 ± 0/02 g/cm ³

The usage of the expandable fiber grout and its properties

The usage of the grout

- It fills under the steel base plates
- Installing rebar and different systems of anchorage
- Filling the space between the foundation and the plates of placing the industrial machinery

The properties of the fresh grout

The details and properties of the expansion of grout before the initial setting are as follows:

- Beginning expansion: 15 minutes after production
- The end of expansion: 2 hours after production
- The expansion: 2% by volume

The properties of the hardened grout

The hardened grout has high strength in all ages. Also, this grout has high durability and low permeability. The compressive strength of the grout with the water-to-powder ratio of 0.18 and according to Iran National standard No.18644 is as follows:

- The 1-day compressive strength: 25MPa
- The 28-day compressive strength: 70MPa

The necessary notes for using the grout and grouting operation

- Each packet of this product fills 12.7 liters with the minimum amount of water.
- It is necessary to clean the surfaces, joints, and holes from contaminations and dust before grouting. If these surfaces are loose and weak, they should be carved to reach the strong part.
- The surface should be fully submerged at least 2 hours before grouting and discharged from water a little before grouting. Also, it is necessary to fully discharge bolt holes by an air pump.
- The base plates and other steel materials should be clean from oil stains completely.
- For grouting under plates, balancing the base plates is accomplished carefully by using suitable parts (Known as a shim) which are supplied by Capco Company.
- The molding around the grout should be accomplished in a way that there will be no leakage. Using sealing tapes and mastic is recommended for this purpose.
- The suitable amount of water is calculated based on the volume of the desired grout and poured in a mixer with proper volume with an approximate speed of 400 rounds per minute. The amount of water, depending on the required consistency varies from 3.5 liters to 4.5 liters per 25 kg grout. Note that this consistency is determined depending on the implementation conditions and the consistency of grout increases in a higher

range of water; moreover, the strength of grout reduces. Therefore, it is necessary to optimize the suitable amount of water based on the implementation conditions by try and error method. The grout powder is gradually added to the mixture while mixing for up to 5 minutes. The mixing should be done in the minimum time and in a way that obtains a homogenous and uniform mixture.

- Mixing should be accomplished at 20°C temperature and in a maximum time of 15 minutes to reach the efficiency of grout expansion to its maximum. This mixture is suitable for joints up to 10 cm and the washed dry clean aggregates with a maximum size of 10 mm can be used for bigger joints. In this situation the mixing ratio of sand and grout will be 1:1. This is done to reduce the cement hydration heat in high thicknesses. Besides, the properties of the grout depending on the amount of used sand can be different from the original product.
- Continuous grouting is very important and therefore, the amount of the prepared grout should be proportionate to the volume of grouting. Grouting must be preferably done from one side so that no air is entrapped in the joint. The grout must be pumped for spaces with a high volume of grouting. Also, it is necessary to take the following tips into consideration:
 - Grouting must be done continuously
 - At temperatures above 25°C, the considerations about concrete casting in hot weather must be considered.
 - Never use an excessive amount of allowable water to obtain higher consistency or to compensate for the decrease in consistency.

Curing grout

The free surface of the grout must be cured after the first setting with a suitable method to guarantee the final strength of the grout. It is recommended to use the CapCure product of Capco Company for this purpose.

Safety tips while using the grout

CapGrout GP is Alkaline, therefore it is necessary to use suitable goggles and gloves while working. It is also necessary to take the following tips into consideration:

- Blink in water for at least 15 minutes in case of eye contact
- Wash your skin with clean water for 15 minutes in case of any contact with the skin
- The contaminated clothes must be washed with suitable detergents to be usable for further work.
- It is necessary to visit a doctor if the injured individual still feels uncomfortable

Other necessary notes about the product

Compatibility of grout with other products

The simultaneous use of this product with other admixtures of Capco Company is allowed. However, it is necessary to batch each admixture separately and then add it to the concrete mix.

The corrosion of admixture

This product does not start or extend corrosion in the buried bars in concrete, the pre-stressed steel, floor systems, and the roof made of galvanized steel. No Calcium chloride or any other compounds containing chloride is used in producing the CapGrout GP.

Transportation and storage of the admixture substance

The conditions and maintenance temperature of transportation

The allowable transportation and maintenance temperature of this product is between 5 and 30 °C. It is also necessary to consider the following tips:

- Avoid putting the container having the admixture in direct exposure to sunlight
- Avoid putting the container in exposure to moisture

The grout lifetime

If the containers of this product are conserved and stored in a standard condition, they will be usable for 12 months.

The packaging of grout

This product is supplied in 25 Kg packets.

Complementary information

Contact the technical section of Capco Company for complementary information. You can also refer to the performance form of (CapGrout GP-PPI) GP for more information on the performance of this product.