ULTRACHEM
For Construction Chemicals

Ultra - Grout HF

Highly fluid, dual shrinkage compensated precision, cementitious grout for gaps 10mm to 125mm thick

ألترا جراوت إتش إف

جراوت أسمنتي عالي الإنسيابيه
غير قابل للإنكماش.

Epoxy & Cementitious Grout

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Uses

Ultra - Grout HF is used for free flow precision grouting in a wide range of applications including:

- Critical machine base plates, sole plates and columns.
- Joints between pre-cast concrete panels.
- Pumped grouting applications.
- Grouting applications where pouring access is restricted.

Advantages

- Excellent initial flow and flow retention.
- Rapid strength gain facilitates efficient installation and operation of plant.
- High ultimate strength and low permeability ensure durability of the hardened grout.
- Hydrogen-free gaseous expansion.
- Chloride free.
- Suitable for pumping or pouring.

Standards Compliance

AS 1478.2-2005 Appendix E Early Volume Change. AS 1478.2-2005 Table 4.1.2.2 Consistency.

Description

Ultra - Grout HF, dual shrinkage compensated cementitious precision grout, is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a free-flowing precision grout for gap thicknesses 10mm to 125mm. In addition the low water requirement ensures high early strength and long term durability. **Ultra - Grout HF** is a blend of portland cements, graded fillers and chemical additives which impart controlled expansion in both the plastic and hardened states. The filler grading minimises segregation and bleeding over a wide range of application consistencies. Maximum aggregate size for pumping is 2.5mm.

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Properties

Compressive Strength				
Consistency	Water Addition	1 Day	7 Days	28 Days
Stiff	2.6-3.4	50	68	77
Plastic	3.4-3.6	38	53	64
Flowable	3.6-3.8	31	48	62
Fluid	3.8-4.0	27	46	60
Flexural Strength (Modulus of Rupture)	1 Day 7 Days 28 Days	3.2 MPa 9.5 MPa 10.0 MPa		
Indirect Tensile Strength	1 Day 7 Days 28 Days	2.5 MPa 4.5 MPa 4.7 MPa		
Setting Time	5.5 hours - initial set 7.5 hours - final set			
Fresh Wet Density	2200 kg/m³ - depending on consistency used			
Alkali reactive particles	Non-reactive			
Flow Characteristics	19-25 seconds (Flow Cone)			
Minimum Thickness	10mm			
Maximum Thickness	125mm			

Clarification of property values: The typical properties given above are derived from laboratory testing. Compressive strengths stated above were measured using cube samples. Test results obtained will vary if carried out to an alternative standard or sample dimensions are used.

Note:

Compressive strengths stated were measured at bottom end water, eg., the 28 day strength of 62MPa for flowable consistency was obtained at a water addition of 3.6 litres water per 20kg bag of **Ultra - Grout HF.**

Test Results to ASTM Specification C1107: 2001

Flow Consistency	145%	
Setting Time	Initial: Final:	5.75 hours 6.75 hours
Plastic Volume Change	+0.57%	
Hardened Volume Change	1 day 3 days 14 days 28 days 56 days	0.12% 0.12% 0.12% 0.12% 0.10%
Compressive Strength	1 day 3 days 7 days 28 days	34.4 MPa 53.5 MPa 63.7 MPa 70.1 MPa

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Note:

All tests were carried out at 25°C ± 2°C until the age of the test. All above test results are independent third party results. Copies of these test results are available on request. The tests were carried out at a water addition rate of 3.6 litres per 20kg.

Flow properties of mixed grout

The flow distances given below in (mm) are intended as a guide. Actual flow distances will vary depending on site conditions:

Gap Depth (mm)	Flowable 100mm head (mm)	Flowable 250mm head (mm)	Fluid 100mm head (mm)	Fluid 250mm head (mm)
10	360	1200	900	2500
20	950	2600	1900	3000
30	1500	3000	3000	3000+
40	2200	3000+	3000+	3000+
50	3000	3000+	-	-

Instructions for use

Preparation

Foundation surface

The substrate surface must be free from oil, grease or any loosely adherent material. Concrete laitance should be removed using low impact scabbling or with needle guns to the degree where aggregate is starting to show. Bolt holes or fixing pockets must be blown clean of any dirt or debris. Bolt holes should also be roughen up using mechanical means. These may need to be grouted beforehand.

Base plate / grout interface

It is essential that this is clean and free from oil, grease, scale, paint or coating of any kind. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Levelling shims

If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

Formwork

The formwork should be constructed to be leakproof as **Ultra - Grout HF** is a free flowing grout. This can be achieved by using foam rubber strip or silicone sealant beneath the constructed formwork and between joints. The formwork should include outlets for draining the presoaking water.

The unrestrained surface area of the grout must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should not exceed 150mm on the pouring side and 50mm on the opposite side. There should be no gap at the flank sides.

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Pre-soaking

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Pre-soaking

Pre-soaking the formed grouting area with clean water helps to ensure good adhesion of the grout at the interface of the concrete foundation and improves the flow of the grout during the installation. The area should be filled with clean water for a minimum 2 hours before the grouting takes place. constructive solutions Page 3 Immediately before grouting takes place, any free water should be removed by draining or vacuum. Particular care should be taken to blow out any bolt holes and pockets.

Mixing

A forced-action mixer is essential. Mix for 3 to 5 minutes at a slow speed (400/500rpm) in a suitably sized drum using appropriate equipment such the Ransom MDR59 140 x 600 M14 Helical mixing paddle (product code: N4020892-UNIT) fitted to a heavy-duty 1600W mixer, such as Ransom RAN160 (product code: NP7AN160-UNIT) or equivalent. The selected water content should be accurately measured into the mixing bucket. While mixing, slowly add the total contents of the **Ultra - Grout HF** bag, mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained. Aways add the powder to the water.

Required Consistency	Litres of water added per 20kg bag	Yield - litres of mixed material
Stiff	2.6 - 3.4	10.4
Plastic	3.4 - 3.6	10.7
Flowable	3.6 - 3.8	10.8
Fluid	3.8 - 4.0	10.9

Mixing larger volumes

Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer. It is essential that machine mixing capacity and labour availability is adequate to enable grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity. The selected water content should be accurately measured into the mixer. Slowly add the total contents of the **Ultra - Grout HF** bags, mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained.

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Placing

Place the grout within 15 minutes of mixing to gain the full benefit of the expansion process. **Ultra - Grout HF** can be placed in thicknesses from 10mm up to 125mm in a single pour when used as an under-plate grout. Where the grouting gap beneath the base plate exceeds the maximum thickness allowed, then the grout can filled / bulked out with **Ultra Grout Aggregate** to minimise exotherm heat build up. Alternatively Ultra Deep Pour is available for pours up to 500mm thick. Filling/bulking out of the grout should not exceed a ratio of 1:1. Please refer to the **Ultra Grout Aggregate** TDS for more guidance on bulking out of cement based grouts. Any bolt pockets must be grouted prior to grouting between the substrate and the base plate. Continuous grout flow is essential. For larger pours the grout may be hand placed or pumped into a removable hopper (trough). Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one.
Continual grout pour must be ensured. The mixed grout should be poured only from one side of the void to eliminate the entrapment of air or surplus pre-soaking water. This is best achieved by pouring the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout front is achieved.

Pumping

Where large volumes have to be placed **Ultra - Grout HF** may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable. Maximum aggregate is 2.5mm. Ensure pump is capable of pumping this size aggregate.

Curing

On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of **Ultra curing** membrane or wet hessian.

Cleaning

Ultra - Grout HF should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically.

Limitations

Low temperature working

When the air or contact surface temperatures are 5°C or below on a falling thermometer, warm water (30-40°C) is recommended to accelerate strength development. For ambient temperatures below 10oC the grout consistency should be flowable and the formwork should be maintained in place for at least 36 hours. Normal precautions for winter working with cementitious materials should then be adopted.

High temperature working

At ambient temperatures above 35°C the mixed grout should be stored in the shade. Cool water (below 20°C) should be used for mixing the grout.

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Estimating

Supply

Ultra Grout HF	:	25 kg pack

Coverage

Consistency (AS 1478.2-2005 Table 4.1.2.2)	Yield / 20 kg bag (Litres of mixed material)
Stiff	12.9 litres
Plastic	13.2 litres
Flowable	13.3 litres
Fluid	13.4 litres

Storage

Ultra - Grout HF has a shelf life of 36 months from date of manufacture if kept in the original, unopened bags. Refer to the manufacture date indicated on the packaging. Do not use if there are lumps in the product, or a loss of workability (requiring more water to be added) is experienced.




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المنطقة الصناعية - أبو رواش - الكيلو 26
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شارع عادل والي - قطعة رقم 91

ألتـــــــرا كيم
لكيماويات البـــــــناء

ألترا جراوت إتش إف

جراوت أسمنتي عالي الإنسيابيه غير قابل للإنكماش.

وصف المنتج

مركب أسمنتي فائق الجودة ذو إنسيابية عالية غير قابل للإنكماش جاهز للإستعمال ,
يعطي إجهاد عالي ومبكر يمكن تصنيعه بأسمنت مقاوم للكبريتات أو بإضافة فيبر.

الإستعمالات

- أعمال الجراوت بـــــصفة عامه يصلح لســـــماكات تصل لأكثر من 10 ســـــم
- يســـتخدم في قـــواعد التحـــميل والأوناش والتوربـــينات والمولدات والماكينات.
- أعمال الحقـــــن أســـــفل المعدات الصناعيه المعرضه للصدمات والإهتزازات.
- يستخدم في إصلاح وتقوية وترميم العناصر الخرسانية المسلحة الأفقيه والرأسيه.
- تجميع وتركيب عناصر الخرسانة المسلحة والمعدنية والسابقـة التجهيز أو الإجهاد.

المميزات

- غير قابل للإنكماش وذاتي التسوية و له قوة تماسك عاليه بالخرسانة.
- الجهد العالي والنفاذيه المنخفضه تضمن عنصر انشـائي عالي القـوه.
- قابـل للضخ و الحقـن والدمك ولا يتأثر بـالتغيرات الكبـيره في درجة الحرارة والرطوبة.
- قوة مقاومة عالية للإنضغاط والإنحناء.
- خالـــــي مـــــن الكلوريـــــدات.

البيانات الفنية

(عند 25 درجة مئوية)

اللون	:	بودرة أسمنتية رمادية اللون.
الكثافة	:	2 ± 0.1 كجم / لتر
إجهاد الضغط	:	25 نيوتن / مم2 عند 1 ايام
	:	55 نيوتن / مم2 عند 7 ايام
	:	64 نيوتن / مم2 عند 28 يوم
التعبئة	:	شكائر زنة 25 كجم
الصلاحية	:	12 شهر من تاريخ الإنتاج في عبواته المغلقة
التخزين	:	في مكان جاف بعيدا عن التعرض لأشعة الشمس

ألتـــــــرا كيم
لكيماويات البـــــــــناء

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جراوت أسمنتي عالي الإنسيابيه غير قابل للإنكماش.

التطبيق والإستخدام

- يتم تجهيز السطح فيجب أن يكون السطح نظيفا وخاليا من الزيوت والشحـوم والشـوائب الأخرى.
- يتم خلط الماده بأستعمال خلاط ميكانيكي بسرعه بـطيئه (300) لفه / دقيقـة).
- يتم تحـــضير كمية الماء اللازمة (3 : 4) لتر / شـــيكاره 25 كجم) حســـب القـــوام المطلوب.
- صب ثلثي الماء المعاير في وعاء الخلط وبالتدريج أضف المادة مع التقليب ثم أضف باقي الماء وأخلط لمدة 3 دقـائق.
- يتم ترطيب السطح الخرساني بالماء قبل صب ألترا جراوت إتش إف.
- يتم صب ألترا جراوت إتش إف حتى سمك 10 سم على مرة واحـدة.

المعالجه :

- يتم معالجة سطح الجراوت بإستخدام ألترا كيور أو بإستخدام الخيش المبلل بعد الإنتهاء مباشرة ولمدة ثلاثة أيام من زمن الشك الإبتدائي.




تعليمـات الأمـان

- يتم تنظيف أدوات التطبيق بعد إنتهاء الإستخدام مباشره قبل الجفاف والإ سيتم التنظيف ميكانيكا بعد الجفاف.
- غير سـامة طبقـا لقـواعد الصحـة والأمان السـائدة.
- يجب إرتداء الملابـس الواقـية المناسبـة والقـفازات وحـماية العين ومعدات حـماية الجهاز التنفسـي.
- عند التلامس مع الجلد يجب الغسل فورا بالماء والصابـون وإذا حـدث تلامس مع العين أو الأغشـية المخاطية يجب الشطف بالماء الدافـىء وإستشارة الطبيب المختص.

لمزيد من التفاصيل ارجع إلى الداتا شيت باللغه الانجليزيه أو اتصل على الإداره الفنية.

جودة تستحق الثقة

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