



# SL-1400

## EPOXY結構補強接著劑

SL-1400 EPOXY structure strengthening adhesion agent

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### 結構裂縫補強材

混凝土裂縫無處不在，建築物的破壞也往往是從裂縫開始的，因此對裂縫的控制和處理至關重要。

混凝土是一種由砂石骨料、水泥、水與部分添加劑組合而成的非均質多孔隙之材質。而混凝土澆灌施工過程中會因材料及天候等因素而改變結構之現象與問題。但混凝土構造物在荷載、溫差與地震等壓力作用後，微細裂縫就會不斷的擴展和延伸，最終形成我們肉眼可見的裂縫。

混凝土建築和構件通常都是帶縫工作的，由於裂縫的存在而衍生致使內部的鋼筋等材料產生腐蝕，因而降低鋼筋混凝土材料的承載能力、耐久性及抗滲能力，輕者影響建築物的外觀、使用壽命等，而嚴重者將會威脅到人們的生命和財產安全。很多都是由於裂縫的不穩定發展所致。

而建築結構中的裂縫問題是不可避免的，在一定的範圍內是可被接受的，只是要採取有效的措施將其危害程度控制在一定的範圍之內。

混凝土裂縫產生的原因很多，有變形引起的裂縫：如溫度變化、熱漲冷縮、不均勻沉陷等原因引起的裂縫；有外載作用(地震等因素)引起的裂縫；有養護環境不當和化學作用引起的裂縫等等。在實際工程中要區別對待，根據實際情況解決問題。

一般混凝土灌漿時漿不實造成梁柱、板、牆造成蜂巢現象，混凝土加入過量灰，灌漿時幫浦車加入過量水，造成灰飛漂浮表面，造成接縫強度弱。

SL-1400 EPOXY結構補強接著劑；是一種針對結構裂縫及蜂巢劣質面進行灌漿和結構修復的綜合性材質由於低粘度、高強度、不收縮的改質環氧樹脂等組成，主要材質技術上均達到或超過國際規定的標準。

所以近年來EPOXY結構補強材工法，效果卓越，廣為建築界、營造界一些重大建設工程之業主接受；如地下鐵、捷運系統等，甚至一般建築工地及民宅修護等。

Crack in the concrete commonly exist. Damage to the building always starts from the crack. So control and treatment of the crack is very important.

Concrete a kind of heterogeneous material with many pores which is made of mortar, cement, water and other addition agent. The material and climate may affect the structure during concrete placement. The tiny crack will extend and expand when the concrete building is under load, temperature difference and earthquake. And we can see the crack in the concrete structure.

Usually the concrete building and structural member is constructed with crack. the steel bar and other material may be corroded because the existence and expansion of the crack. and it will have a bad impact on the concrete material load, durability, and impermeability. The building may looks bad and the its useful life may be shortened. What's worse, it may threaten people's life and property safety.

However, crack in the building structure is unavoidable. It is accepted in a certain range. The effective measures should be taken to control its damage.

There are kinds of causes for the concrete crack existence. Deformation crack which is caused by temperature change, expansion and contraction, unevenly subsidence. Outside force(earthquake etc.) crack which is caused by wrong curing environment and chemical function etc. to solve the problem, we have to know the situation well.

Hollowness when construct concrete placement will cause combs in the beam column, plate and wall. Too much lime in the concrete and too much water in the pump during concrete placement will cause the lime float on the surface and weaken the joint strength.

SL-1400 EPOXY structure strengthening adhesion agent is suitable for injection and structure repair of structure crack and comb on the weakened face. It is made of epoxy resin which has low viscosity, high strength, no contraction. The base material technique can meet or exceed the international specified standards.

In recent years, the EPOXY structure strengthening working method has been commonly accepted in the construction and building field because of its good effect. It is suitable for subway, rapid transits system or even the ordinary building and house repair.



## 『產品說明』 Product description

SL-1400 EPOXY結構裂縫補強接著劑為雙液型，低黏度，常溫硬化型之環氧樹脂注入式補強材，廣泛運用於混凝土構造體上之龜裂修補及結構補強之用，例如：隧道、橋樑、樑柱、樓板、結構壁體等裂縫補強。

此注入樹脂也可與石英砂或金鋼砂等骨材拌合使用，運用於樑柱剪(扭)力破壞時，再以鋼板包覆補強，灌注修補結構與鋼板間之孔隙。

此注入樹脂也可使用於二次結構牆澆注預留口之補強。

SL-1400 EPOXY two component type structure strengthening adhesion agent is a kind of epoxy resin injection type strengthening material with low viscosity and it can harden in the normal temperature. It is widely used in crack repair and structure strengthen in the concrete structure. Such as crack in the tunnel, bridge, beam column, floor, structure wall etc.

When the beam column was damaged by shearing force, mix this injection resin and quartz sand or silicone sand and fill the mixture into the damage place. Then cover with steel board. Injection it in the crack between the steel board and structure.

It also can use for the strengthening the second structure wall placement wall pocket.

## 『產品特性』 Product character

(1)不收縮，灌漿補強硬化後，不產生二次接縫。

No contraction, it won't cause the second joint after hardened.

(2)SL-1400 EPOXY樹脂達95%以上的高固成分，接著性強，不論是配合以高低壓注入式施作，對微細之裂縫均可完全發揮，修補或補強之作用。

SL-1400 EPOXY contains more than 95%solid content. Good adhesion. it is good for repairing or strengthening the hairline. Both high pressure injection and low pressure injection are both ok.

## 『應用範圍及用途』 Range of application and function

1. 混凝土結構裂縫高低壓灌注補強。
2. 混凝土蜂巢高低壓灌注補強。
3. 混凝土結構與鋼板搭接處補強。
4. 結構與粉刷層搭接處空鼓補強。
5. 樑柱鋼板包覆補強。
6. 粉化地坪整平、補強。
7. 凹槽補強 外露鋼筋防銹處理。



樑柱鋼板包覆灌漿補強  
Pile steel board wrapped injection strengthening

1. concrete structure crack high or low pressure injection strengthening.
2. concrete comb high or low pressure injection strengthening.
3. concrete structure and steel board overlap strengthening.
4. structure and finishing layer overlap hollow strengthening.
5. beam column steel board cover strengthening.
6. chalking ground flattening and strengthening.
7. channel strengthening and exposed steel bar rust-proof treatment.



## 『施工方式』 Working method

1. 裂縫低壓灌注補強時(詳:牆面裂縫低壓灌注補強示意圖)※當針筒內無藥劑時，及時充填以免裂縫內藥劑不夠，達不到補強效果，針筒內至少保留1/3藥劑。
2. 蜂巢補強時，須將劣質打除，清除乾淨、組模，EPOXY A+B劑混合加入適量骨材攪拌均勻，注入蜂巢內直到溢出或以不打除方式處理，蜂巢表面EPOXY補平、鑽孔，鎖緊針頭高壓灌注EPOXY補強。
3. 牆面空鼓以裂縫補強方式處理，地磚空鼓在磚縫處鑽孔、鎖緊針頭，以低轉速方式注入EPOXY補強劑。
4. 地坪粉化面EPOXY以抹刀或水耗及滾筒施作，表面灑細砂，增加後續工程材接著力。
5. 凹槽EPOXY A+B劑混合加入細砂及石粉攪拌成不垂流狀，塗佈於施工面補平強面裂縫。

1. when using low pressure injection strengthen the crack(refer to wall crack low pressure injection strengthening detail drawing )refill the injection syringe in time when there's no medicament in it. Otherwise the strengthening effect may not be good enough. 1/3 medicament should be left in the injection syringe.
2. clear up the weaken place when doing comb strengthening, mix EPOXY A and B components with moderate base material evenly then fill it in the comb until overflow; or flatten the comb surface and drill holes, lock the injection packer, inject EPOXY with high pressure injection pump.
3. the crack strengthening method can be applied in wall hollow. Floor tile hollow: drill holes near the tile crack, lock the injection packer, and injection EPOXY strengthening agent with low rotate speed.
4. chalking terrace: apply EPOXY with trowel or roller. Spill fine sand on the surface to enhance the adhesion for the subsequent project material.
5. channel: mix EPOXY A and B components with sand or lime to the non-liquid status, coat and flatten the wall crack.

## 『施工注意事項』 Construction note

- (1)在低溫狀況下，底漆(Primer)及環氧樹脂(Epoxy)黏度會增加，硬化反應較遲緩。會引起硬化反應不良之狀況。冬季或寒冷地帶，施工條件要慎重檢討，氣溫有5°C以下不可施工。
- (2)水分的存在會阻礙底漆及環氧樹脂的黏著。有漏水情形時，先做止水、導水處理，有可能結露的時後不可施工。
- (3)低溫時黏度會增加，可以加微量甲苯、二甲苯有機溶劑等來稀釋。主劑與硬化劑混合後，嚴守有效使用時間，超過使用時間的東西不可使用。
- (4)請依照材料規定之拌合比例確實使用。

- 1.The viscosity of the primer and EPOXY will increase when the temperature is low and the hardening time will last longer. It may cause the bad hardening. Do not construct when the temperature is below 5°C.
- 2.The existence of water will affect the adhesion of primer and EPOXY. Leakage stoppage or water guiding treatment is necessary when it is leaking. Do not construct on the place that dew may condensate.
- 3.The viscosity will increase when the temperature is low. Dilute it with organic solvent that contains toluene or xylol. After mix the main agent and the harden agent, use up within the valid time. do not use it if it exceed the valid time.
- 4.Please use it in proportion.



# 『環氧樹脂低壓灌注施工示意圖』 EPOXY resin low pressure injection working sketch map

步驟一:裂縫先以鑽石頭切割機切V槽，V槽內灰塵清除乾淨，以利後續施作接著性。

步驟二:於裂縫處以EPOXY補土A:B(1:1)之配比調合後均勻塗佈於裂縫處。

步驟三:針頭埋設距離請依裂縫寬度決定，如縫窄時1M四支為宜，縫寬1M三支或二支亦可。

步驟四:注入SL-1400配比1:1之環氧樹脂填縫補強，待硬化後再將灌注針頭清除，原來EPOXY補土凸出面磨平。

step one:

Make a V shape cut on the crack, clean the dust in the V cut to enhance the adhesion

step two:

Mix EPOXY A and B components in the proportion of 1:1 evenly and coat on the crack.

step three:

The width of the crack depends the distance between the injection packer. If the crack is narrow, 4pcs/m is ok. If the crack is wide, 2or 3pcs/m is ok.

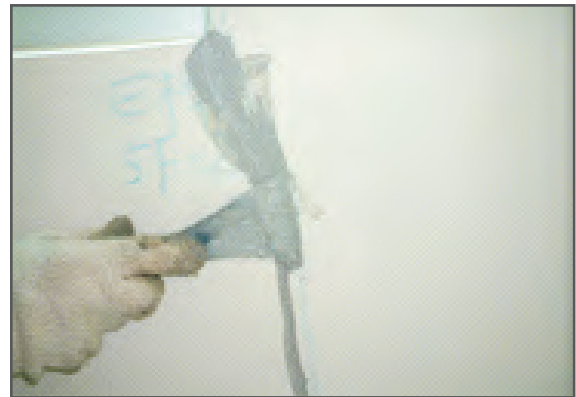
step four:

Inject SL-1400 EPOXY in proportion of 1:1 in the crack to strengthen. Demolish the injection packer after it harden and grind the inflate surface till it is flat.



步驟一:裂縫切割示意圖

step one:Crack cutting sketch map



步驟二:裂縫補土填平示意圖

step two:Flatten with sealer sketch map



步驟三:針筒底座埋設安裝示意圖

step three:Lay the support of the injection syringe sketch map



步驟四:低壓灌注示意圖

step four:Lowpressure injection sketch map

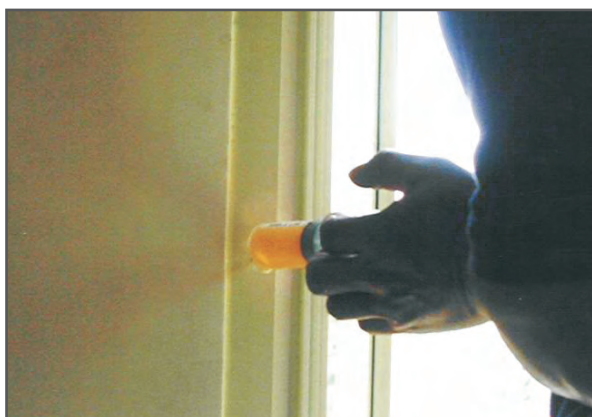




步驟一:鋁料鑽灌注孔  
step one: aluminum  
material drill injection hole



步驟二:橫料低壓灌注  
step two: horizontal  
material low pressure injection



步驟三:立料低壓灌注  
step three: vertical material  
low pressure injection



步驟四:灌注孔拉釘補孔  
step four: injection hole nail fill the hole

## 『施工人員安全注意事項』 Construction worker safety note

- 使用時避免噴濺眼睛，如噴到請速用清水沖洗後，立即送往醫院就醫。
- 為保護施工人員之安全，使用時，請戴 護目鏡橡皮手套。

To avoid materials invasion into eyes, please wear goggles, rubber gloves and mask when constructing. If materials attach skin or eyes, please clean it with large sum of clear water and then go to hospital as soon as possible.

## 『材料存放注意事項』 Material storage note

- 請倒料完成後，請蓋緊料杯蓋密封。
- 請勿儲存於-5° 以下低溫處或高溫處放置。
- 置放於乾燥處，保存期限6個月。
- Cover the lid of the material cup after pour the material.
- Do not store it in the place that the temperature is below -5°C or the temperature is too high.
- Keep it in dry. The storage life is 6 months.





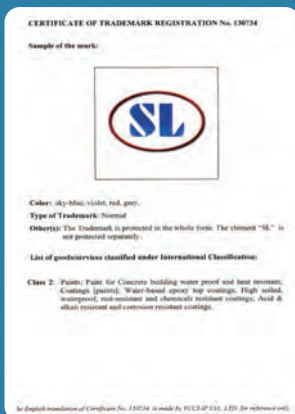
## 『包裝』 Packing volume

- A劑20Kg/5加侖桶裝
- B劑10Kg/2.5加侖桶裝
- 配比A:B(2:1)
- A component 20kg/5 gallon in barrel
- B component 10kg/2.5gallon in barrel
- (proportion: 2: 1)

**Note:** 本說明書的內容是建立在於真實準確的數據與理念上，供材料使用者參考，由於無法改變控制施作時天候所造成之材料質變等各種不確定因素，所以我們無法負責保證現場施作所得之結果。請詳閱我方所提供之產品說明，我方銷貨條件及有關聲明和建議，都不可用來違反法律規則或侵犯第三者利益。

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