

Surface Preparation: Joint Sealant Application Surfaces

Surface Preparation Information for **StenSeal®** Brand Two Component Joint Sealants

1. General

- a. First and most important aspect of joint sealing is proper preparation of the surface.
- b. Required cleaning and surface preparation processes must be carried out with care and attention. Surface preparation not carried out by professionals usually leads to defects. Applicators must be trained and supervised.
- c. Required inspections must be conducted by authorized persons and sealing application must be allowed only if the surface is properly cleaned.
- d. A system can be just as strong as its weakest component. If the application surface is contaminated with a foreign material; that is, if there is another layer between the joint surface and the sealant; the adhesion may not be stronger than the adhesion of that foreign material to the sealant and joint surface and the total elasticity may not be higher than the elasticity of that material.
- e. Cleanliness of the surface is a must but not sufficient. Sealant and materials applied on surfaces that were not dry are adversely affected. The surface may look dry, but that does not necessarily prove that it is dry. Applicators must be careful especially in cold weather, after rain, snow and when relative humidity is high. If there is a risk, the application must not be carried out or in urgent cases the application must be carried out after the surface is dried thoroughly by means of hot air. Relative humidity of the concrete must be below 75%.
- f. Basic rule that the joint applicators must observe can be summarized in few words: Joints must be clean and dry.

2. Concrete Surface Preparation

- a. Concrete surfaces must be completely cured, clean and dry. Curing materials like paraffinic emulsion used during concrete casting, mold separator materials and other similar remains that may contaminate the surface must be removed by sandblasting or mechanical abrading and concrete surface must be exposed. Loose materials must be removed from the surface; broken joint edges, cracks next or close to the joint must be repaired.
- b. Especially concrete dust smeared on the joint surface during sawing looks like concrete and it is hard to distinguish them by visual inspection, this layer must be removed by mechanical abrasion.
- c. If the concrete is prepared with non-standard additives, it must be tested whether the chemicals used affect adhesion.
- d. Concrete surfaces are often moist due to rain water and water absorbed from the ground. Even if the surface looks dry, it may contain moisture sufficient enough to prevent a good adhesion. In such cases, primer and sealant applications must either be delayed or they should be applied after drying by means of hot air blowers, flame or surface cleaning with water miscible solvents such as methyl ethyl ketone.
- e. You can refer to Primer Selection Guide in selecting primers compatible with concrete surfaces.

3. Glass and Glassy Surfaces

- (Porcelain, Glazed Tiles, etc.)
- a. A good sealing application on glass and other glassy surfaces is also possible only with a complete cleaning.
- b. Contaminations on the surface like oily materials and finger prints invisible to naked eye have an adverse effect on adhesion. This type of surfaces

must be cleaned with a solvent such as MEK or IPA and must be dried well.c. Solvents used must be clean and free from greasy impurities.d. Sealants must be applied as soon as possible following the drying of the surface after cleaning.e. You can refer to Primer Selection Guide in selecting primers compatible with glass and glassy surfaces.

4. Wood

a. Joint sealants adhere perfectly on dry and new wooden surfaces.b. Cleaning is very important in applications carried out on old wooden surfaces.c. Cracks, broken and sprung parts must be repaired by means of filling and repair pastes.d. Paints on old, painted surfaces must be removed.e. Primer must be used on oil containing woods such as resinous pine and teak.f. If the wood oil bearing, adhesion develops slowly.g. If sealant must be applied on a painted surface, paint surface must be roughened. Testing the adhesion of the sealant on the painted surface is helpful before such an application.h. You can refer to Primer Selection Guide in selecting primers compatible with wooden surfaces.

5. Metal

a. Sealing application can also be carried out in metal joints. Cleaning is the most important matter for metals. Surfaces cleaned and roughened by means of sandblasting, brushing with wire brush, mechanical abrasion or sanding are excellent for adhesion.b. All protective coatings except strongly adhered quality varnishes, oven dry paints, powder paints, acrylic and polyurethane paints must be removed. Surfaces of undamaged paints and coatings must not be covered with oil, wax or any other material that prevents adhesion. An adhesion test must be conducted on painted metal surfaces and sealant must be applied only if a proper result is attained.c. Invisible oxide layers on old aluminum and steel may cause some problems. The surfaces must be freed from all contaminants and cleaned as good as possible before priming. Sufficient cleaning can be obtained by sandblasting, mechanical abrading and sanding. These surfaces must be wiped with a solvent but they must not be polished.d. Grease and oils on the surface must be removed by wiping with good quality synthetic and cellulosic thinner. Contaminants dissolved in the solvent must not be allowed to foul the surface again. Therefore used solvents must not be reused in cleaning.. The surface must be wiped by using a clean cloth while it is still wet with solvent.e. In prefabricated buildings, sheds, containers with metal panels, special attention must be paid to cleaning surfaces in metal to metal wall joints. Since these surfaces are not exposed, they cannot be cleaned simply by brushing. Using powerful cleaning devices such as rotating brushes may be required. If metal surfaces are paired with a different type of material, primer used must be compatible with both surfaces.f. Since thermal expansion coefficients of the metals are quite high, sealants used must have high elasticity.g. You can refer to Primer Selection Guide in selecting primers compatible with metal surfaces.