

Applying ASODUR® products

Preparation and application instructions

Preliminary remark:

Epoxy resin floor coatings are indispensable in today's surface protection. Depending on the requirements of the covering and when applied correctly, the coatings created from them exhibit high mechanical strengths, are resistant to chemicals, slip-resistant, crack bridging, decorative, etc. Apart from the selection of suitable products, particular prerequisites for success are the preparation and application conditions. This additional technical information contains important notes on the correct application of ASODUR products.

Subsurface preparation:

The surfaces must be dry, firm, load-bearing and slip-proof. I.e. the substrate

- must be a minimum of 28 days old
- must be free of separating and adhesion inhibiting substances, e.g. cement slurry, dust, grease, rubber abrasion, and other loose parts
- must exhibit a surface strength (tensile adhesion) of av. 1.5 N/mm²
- must not exceed a residual moisture level of ≤4% (CM method)
- must be protected against moisture penetration from the rear.

Suitable methods, e.g. brushing and grinding, sandblasting, milling, flame blasting, shot blasting and high-pressure water jetting, should be used for preparation, depending on the condition of the substrate. Visible or recognisable defects must be reported to the developer. Only such measures make it possible to detect damaged areas of the concrete and screed surfaces, e.g. cracks, partial damaged areas in the surface, edge break-outs on the joint flanks, unevenness, pores and cavities, as well as different roughness depths, which it is imperative to eliminate. Such damaged areas must be repaired with special ASODUR/ASOCRET products, in order to ensure the functionality of the floorings.

Damp concrete substrates/fresh concrete:

Damp-proof primers such as ASODUR-SG2 or ASODUR-SG3/ASODUR-SG3-superfast and ASODUR-SG3-thix can be used as diffusion barriers on load-bearing, non-slip, still matt damp concrete surfaces and bonded cement-based screeds.

Mastic asphalt screeds:

Mastic asphalt screeds of minimum quality AS-IC10 in interior areas must be sanded on the surface.

Magnesite and calcium sulphate surfaces:

Quality requirements according to DIN EN 13813 MA-C35-F5 or CA-C25-F5.

We recommend shot blasting for surface preparation. Before surface treatment, moisture measurements should be taken to ensure that the specific household moisture levels are present. Also ensure that these sensitive coverings are professionally prepared and protected against moisture loads from the rear. Surfaces in contact with the ground may only be treated with water vapour diffusible sealants or coatings.

Iron and steel surfaces:

Iron and steel surfaces are to be prepared by de-rusting, in accordance with the standard degree of purity Sa 2 1/2 per DIN EN ISO 12944-4.

Temperature and site conditions:

Both the ambient temperature and the site temperature are significant with respect to

- the application
- the reaction and
- material consumption of the ASODUR products.

Low temperatures

- delay the reaction, which can lead to a sticky surface due to reaction with humidity and CO₂
- can lead to increased material consumption due to increased viscosity, as well as impairing the flow properties.

Applying ASODUR® products

Heating

The combustion of oil and gas produces combustion products including water. Gas hot-air blowers etc. are therefore not suitable for drying if sufficient ventilation cannot be provided.

High temperatures

- accelerate the curing reaction
- shorten the application times
- can negatively affect the surface structure.

The optimum application temperature is +23 °C, or between +15 °C and +25 °C as a minimum.

Priming and sealing work on exterior surfaces may only be carried out at constant or falling temperatures to avoid condensation. The formation of condensation, e.g. in the morning hours, can lead to bubbles in the surface or even to the applied material detaching completely. It is therefore necessary to avoid carrying out work in direct sunlight or in the event of rain. The optimum time for application is therefore around midday and during the early hours of the afternoon. This should also be taken into account in interiors with large window areas (sunlight). The surface temperature of the surface **to be treated must be at least 3 °C above the dew point as a minimum.** (See table on last page!)

When applying water-based or water-dilutable products such as ASODUR-V360W, the evaporation of water in indoor areas may cause an increase in humidity. As such, adequate ventilation must be provided. If humidity is too high, this leads to a prolonged drying time and possibly to a temperature below the dew point. Work must then be stopped promptly. After they have been applied, surface protection systems must be protected against dampness, e.g. rainwater, condensation water, etc., for min. 4–6 hours. Discolouration and/or sticky surfaces must be removed and reworked, e.g. through grinding or shot/granulate blasting. In the case of products containing solvents and products with a low solvent content, always ensure adequate ventilation of the rooms.

In accordance with the accident prevention regulations and the relevant guidelines of the employers' liability insurance association, take into account measures for fire and explosion protection as well as the corresponding construction site safety.

Applying ASODUR products:

ASODUR products are delivered in mixing drums, i.e. resin and hardener components in the correct, predetermined mixing ratio.

Component B (hardener) is added to component A (resin). It should be ensured that the hardener drains completely from its container. A suitable mixer should be used to mix the two components, and this should take place at approx. 300 rpm. (e.g. drilling machine with stirrer, forced paddle mixer, or similar). Higher revolutions bring more air into the mixed material, which may lead to the formation of bubbles.

The contents should also be stirred up from the sides and from the base, so that the hardener will be distributed evenly. Continue stirring until the mixture is homogeneous (free of streaks). The mixed material must not be applied from the delivery container, because the mixture ratio on the container walls is not usually homogeneous. After mixing in the delivery container, the mixture is poured into a clean mixing bucket and stirred again. The temperature of resin and hardener should be between +10 °C and +20 °C during the mixing process, because this is decisive for the material quality. If aggregates (e.g. quartz sand) are mixed in, make sure that these are kiln-dried and also have a material temperature between +10 °C and +20 °C.

Levelling mortar/levelling compounds:

The quartz sand is mixed into the previously homogeneously mixed and re-potted resin and hardener component. Care must be taken that the liquid and solid components are mixed evenly.

Applying ASODUR® products

Epoxy resin screeds:

The aggregates are mixed in a forced paddle mixer (e.g. type: Collomatic, Zyklus or UEZ). The previously homogeneously mixed resin and hardener components are then added. Care must be taken that the liquid and solid components are mixed evenly. When working with 2-component ASODUR products, please note that only those quantities of material are mixed that are to be used within the application time specifications (see respective Technical Data Sheet).

Method of application:

Impregnations, sealants, primers and roller coatings:

Are evenly distributed on the prepared substrate, e.g. with a suitable rubber slider, and then rolled over crosswise with a short pile roller. When applying ASODUR-SG2, the use of a primer brush is additionally required. Depending on the substrate structure, a second primer coat may be required, plus sanding with kiln-dried quartz sand.

Primers:

Are sprinkled with SCHOMBURG quartz sand when fresh (exception: ASODUR-SG3/ASODUR-SG3-superfast and ASODUR-SG3-thix). After the primer has hardened, the unbound quartz sand must be meticulously removed.

Levelling coatings/levelling mortars:

Are evenly distributed by means of a smoothing trowel, rubber or sheet steel scraper. The use of a toothed scraper, selected according to the desired layer thickness, ensures an even layer thickness. To deaerate the applied self-levelling coating, it is imperative to roll over the surface crosswise with a spiked roller to avoid the formation of bubbles on the surface.

Mortar and screed systems:

Are professionally laid with suitable installation tools and equipment, e.g. levelling bar, screed board and blade or finishing trowel.

Initial care/maintenance cleaning:

After curing the ASODUR-coating, we recommend using the oil and industrial floor cleaner ASO-R008 for cleaning and maintenance indoors.

Initial care inhibits the absorption of dirt and makes future cleaning much easier. In case of non-existent or insufficiently clean running surfaces, contamination with abrasive components (e.g. dust, dirt, stones, sand, etc.) can occur on the reaction resin surface, which can lead to scoring, scratches and damage when mechanically stressed by foot traffic and/or other usage-related traffic. Visible as light scratches, especially with dark surface shades.

Mechanical loads:

Abrasive strain during use may cause scratches in the coating or sealing surfaces which will be visible particularly in the case of dark colour shades. This will not have a negative impact on functionality. We recommend cleaning and treating the surface with ASO-R008 in order to maintain the surface quality and appearance during use.

Slip prevention:

The planner/client must check whether the non-slip properties of the coating and sealing structures with the desired properties comply with the requirements of the professional association for slip resistance in accordance with DGUV standard 108-003 in its current version for the intended area of application.

Storage:

ASODUR products should be stored in a cool, but frost-free and dry place. Avoid direct sunlight and water exposure during storage.

The optimum storage temperature is between +10 °C to +25 °C. The best before dates indicated on the delivery containers are minimum shelf lives.

If stored properly, the products can be applied without any restrictions on the product quality.

Applying ASODUR® products

Protective measures:

After hardening, ASODUR products are physiologically harmless.

- The hardener component (B-component) is corrosive.
- It is therefore imperative to ensure that the skin does not come into contact with the hardener.
- Wear suitable protective clothing and goggles during application.
- If the skin is contaminated, clean it immediately with soap and water (if necessary, add 2% household vinegar).
- If splashes get into the eyes, rinse immediately with water and then rinse with an eye wash bottle containing boric acid. Then consult a doctor immediately.
- Observe the occupational-safety-related safety precautions, the safety data sheets and the instructions on the containers during application.

Safety regulations of the trade association, etc.:

- Application of epoxy resins: Data sheet M 023
 - Application of polyurethane resins: Data sheet M 024
- * ZTV-SIB 98:
Additional Technical Regulations and Relevant Guidelines for the Protection and Repair of Concrete Structures; Federal Minister of Transport, Edition 1998.
- ** DAfStb: (Issue Oct. 2001)
German committee for reinforced concrete

Notes:

- Test surface: The planner and processor are responsible for testing the products for the respective site, intended uses and local loads.
- For application, observe the respectively valid technical data sheets and safety data sheets of the listed products.

Applying ASODUR® products

Dew point table:

The dew point temperature is the temperature at which the air is saturated with water vapour. The lower the temperature, the less water vapour the air can absorb. If the temperature drops to the dew point temperature, for example on cooler wall

surfaces, condensation of water vapour will result. When completing coating work, especially at high temperatures and/or high humidity, always observe the dew point temperature.

Air temperature (°C)	Dew point temperature in °C at a relative humidity of ¹⁾															
	20 %	25 %	30 %	35 %	40 %	45 %	50 %	55 %	60 %	65 %	70 %	75 %	80 %	85 %	90 %	95 %
2	-18.6	-16.0	-13.8	-11.9	-10.2	-8.7	-7.3	-6.1	-4.9	-3.9	-2.9	-2.0	-1.1	-0.3	0.5	1.3
4	-16.9	-14.3	-12.0	-10.1	-8.4	-6.9	-5.5	-4.2	-3.1	-2.0	-1.0	0.0	0.9	1.7	2.5	3.3
6	-15.3	-12.5	-10.3	-8.3	-6.6	-5.0	-3.6	-2.3	-1.2	-0.1	1.0	1.9	2.8	3.7	4.5	5.3
8	-13.6	-10.8	-8.5	-6.5	-4.8	-3.2	-1.8	-0.5	0.7	1.9	2.9	3.9	4.8	5.7	6.5	7.3
10	-11.9	-9.1	-6.8	-4.7	-2.9	-1.4	0.1	1.4	2.6	3.8	4.8	5.8	6.7	7.6	8.5	9.3
12	-10.2	-7.4	-5.0	-3.0	-1.1	0.5	1.9	3.3	4.5	5.7	6.7	7.8	8.7	9.6	10.5	11.3
14	-8.6	-5.7	-3.3	-1.2	0.7	2.3	3.8	5.2	6.4	7.6	8.7	9.7	10.7	11.6	12.4	13.3
15	-7.7	-4.8	-2.4	-0.3	1.6	3.2	4.7	6.1	7.4	8.5	9.6	10.7	11.6	12.6	13.4	14.3
16	-6.9	-4.0	-1.5	0.6	2.5	4.1	5.6	7.0	8.3	9.5	10.6	11.6	12.6	13.5	14.4	15.3
17	-6.1	-3.1	-0.7	1.5	3.4	5.0	6.6	8.0	9.2	10.4	11.6	12.6	13.6	14.5	15.4	16.3
18	-5.3	-2.3	0.2	2.4	4.3	5.9	7.5	8.9	10.2	11.4	12.5	13.6	14.6	15.5	16.4	17.3
19	-4.4	-1.4	1.1	3.2	5.2	6.9	8.4	9.8	11.1	12.3	13.5	14.5	15.5	16.5	17.4	18.2
20	-3.6	-0.6	2.0	4.1	6.1	7.8	9.3	10.8	12.1	13.3	14.4	15.5	16.5	17.5	18.4	19.2
21	-2.8	0.3	2.8	5.0	6.9	8.7	10.2	11.7	13.0	14.2	15.4	16.5	17.5	18.5	19.4	20.2
22	-1.9	1.1	3.7	5.9	7.8	9.6	11.2	12.6	13.9	15.2	16.3	17.4	18.5	19.4	20.4	21.2
23	-1.1	2.0	4.6	6.8	8.7	10.5	12.1	13.5	14.9	16.1	17.3	18.4	19.4	20.4	21.3	22.2
24	-0.3	2.8	5.4	7.7	9.6	11.4	13.0	14.5	15.8	17.1	18.3	19.4	20.4	21.4	22.3	23.2
25	0.5	3.7	6.3	8.5	10.5	12.3	13.9	15.4	16.8	18.0	19.2	20.3	21.4	22.4	23.3	24.2
26	1.4	4.5	7.2	9.4	11.4	13.2	14.8	16.3	17.7	19.0	20.2	21.3	22.4	23.4	24.3	25.2
28	3.0	6.2	8.9	11.2	13.2	15.0	16.7	18.2	19.6	20.9	22.1	23.2	24.3	25.3	26.3	27.2
30	4.7	7.9	10.6	12.9	15.0	16.8	18.5	20.0	21.5	22.8	24.0	25.2	26.2	27.3	28.3	29.2
32	6.3	9.6	12.3	14.7	16.8	18.7	20.3	21.9	23.3	24.7	25.9	27.1	28.2	29.2	30.2	31.2
34	7.9	11.3	14.0	16.4	18.6	20.5	22.2	23.8	25.2	26.6	27.8	29.0	30.1	31.2	32.2	33.2
36	9.6	12.9	15.8	18.2	20.3	22.3	24.0	25.6	27.1	28.5	29.7	30.9	32.1	33.2	34.2	35.1
38	11.2	14.6	17.5	19.9	22.1	24.1	25.8	27.5	28.9	30.3	31.6	32.9	34.0	35.1	36.1	37.1
40	12.8	16.3	19.2	21.7	23.9	25.9	27.7	29.3	30.8	32.2	33.5	34.8	36.0	37.1	38.1	39.1

¹⁾ The dew point table indicates at which surface temperatures condensate occurs, depending on the air temperature and the relative humidity.

Example: At +22°C air temperature and 60% relative humidity, the dew point for the site temperature is +13.9°C. If the surface thermometer indicates a value below +16.9°C (+13.9°C + 3°C safety factor) no coating work is possible.