

# L400 | Pumpable Leveling Screed

## 40 MPa

### Product Description

ARDIYYA-L400 is a preblended cement-based flooring screed designed for leveling and screeding applications. It may be applied onto either a solid in-situ concrete ground floor slab, a precast concrete floor unit or other cement-based floor surfaces.

ARDIYYA-L400 may be used for obtaining a defined level to finish the final flooring, rectify uneven or damaged concrete surfaces, create an even surface under tiles, create a slope for drainage purposes on concrete slabs and floors, or level concrete slabs and floors or other concrete structural elements.

ARDIYYA-L400 can be used as a bonded screed, unbonded screed or as a floating screed on an insulation layer.

ARDIYYA-L400 is composed of hydraulic binders, selected manufactured aggregate, special additives to provide excellent workability, and fibers.

### Features/Advantages

- Pre-blended dry material that only requires the addition of potable water at site.
- Factory controlled ensuring high quality product with assured consistency.
- Easy to apply with enhanced workability allowing a faster construction process, saving cost, time and manpower.
- Excellent resistance to harsh weather conditions providing excellent durability.
- Excellent mechanical properties.
- In accordance with relevant international specifications.

### Conformity with Standards

ARDIYYA-L400 conforms to the following standards:

- EN 13813
- ASTM C150
- BS 8204-1

### Technical Data<sup>1</sup>

Appearance	Light grey powder
Aggregate Size	Up to 2 mm
Dry Density	1.5 ± 0.1 kg/l
Wet Density	2.0 ± 0.1 kg/l
Working life	Approx 30 min
Compressive Strength <sup>2</sup>	≥ 40 N/mm <sup>2</sup>
Flexural Strength <sup>3</sup>	≥ 4 N/mm <sup>2</sup>
Screed Class (EN 13813)	C40 – F4
Substrate (base) Types	In-situ, precast
Application Use	For internal use only
Application Temperature	5° C to 35° C
Yield	535 to 560 l/t
Coverage <sup>4</sup>	13.5 to 14.5 m <sup>2</sup> /t
Packing	Bulk or jumbo bags (1 ton)
Shelf Life <sup>5</sup>	12 months

<sup>1</sup> The above technical data are generated under laboratory conditions, some variations are expected due to weather, site, and application conditions which are beyond the control of the manufacturer.

<sup>2</sup> Compressive strength at 28 days as per ASTM C109.

<sup>3</sup> Flexural strength at 28 days as per ASTM C 348.

<sup>4</sup> The figures of coverage mentioned above are based on 40 mm screed thickness and are general guidelines only. Actual coverage depends on application method, substrate type and nature, and material wastage.

<sup>5</sup> Under dry shaded conditions and in its original unopened packing.

Hardening Time			
Before Foot Tra	24 h		
Before Light Tra	3 days		
Before Common Tra	28 days		
Thickness			
	Minimum <sup>6</sup>	Recommended	Maximum
Bonded	30 mm	40 mm	60 mm
Unbonded	50 mm	70 mm	90 mm
Floatin	65 mm	80 mm	100 mm

<sup>6</sup> Refer to BS 8204-1.

## Application Instruction

Perimeter joints must be made around the room walls and around pillars by inserting 1 cm thick compressible material, such as expanded polystyrene. Also, joints must be made in correspondence with those in the floor slab.

## Base Preparatio

### Bonded Screed

The bond between the levelling screed and the concrete base depends to a great extent upon the conditions of the surface of the base at the time of laying the screed.

The surface of the base must be clean, sound, rough and free from oil, grease, curing compound or any other material that may reduce the adhesion and bonding of ARDIYYA-L400 with the substrate surface.

In the case of in situ slabs, or precast units, any laitance on the base should be entirely removed (preferably by suitable mechanized equipment) to cleanly expose the coarse aggregate. All loose debris and dirt should be removed (preferably by vacuuming).

With precast units, for bonded but non-structural levelling screeds, the surface of the units should be left rough during production and should be thoroughly washed and cleaned, e.g., by wire brushing, to remove all adhering dirt. Where the levelling screed is designed to act compositely with the units and additional preparation of the units is required, the use of contained shot-blasting equipment are found to be more suitable than mechanical scabbling if there is a risk that the latter might damage the units.

To prevent later contamination or accumulation of dirt, these operations should be delayed until shortly before the levelling screed is laid.

### Base Priming

To guarantee that the screed bonds perfectly to the base, spread a layer of cement-based bonding slurry over the base. The bonding slurry is usually a mix of cement, water and a type of bonding agent (PVA or SBS types). Bonding agents should be used in accordance with the manufacturer's instructions.

When screed is laid in areas subjected to high mechanical stresses, use epoxy adhesive instead of cement-based bonding slurry.

Whatever type of adhesion promoter is used, the new mix must be applied using the "wet on wet" technique.

### Unbonded Screed

The surface of the base must be clean, debris and dirt should be removed. Any cracking or hollowness of the existing base should be sought and appropriate remedial treatment carried out. Cracks and loose or hollow portions should be cut out and made good.

The base should be covered by a Polyurethane or PVC sheets. The sheets must overlap each other by at least 20 cm and be taped together, while the edges and ends are folded upwards by 10 cm onto the pillars and walls.

### Floating the Screed

A base of in situ or precast concrete should be smooth and level enough to carry rigid or semi-rigid insulation boards and so avoid boards sitting on high spots creating wide voids. Any such depression should be filled (before laying the boards) with cement grout or screed material.

## Mixing

- **Mixing by Power Machine:** Adjust the flow meter to obtain a mixed material with a consistency that meets the project specifications.
- **Mechanical & Manual Mixing:** Add 50 kg of ARDIYYA-L400 to 9 to 9 ½ liters of clean potable water for getting a flowable screed. Add 50 kg of ARDIYYA-L400 to 7 to 7 ½ liters of clean potable water for getting a semi-dry screed.

Always add the material to water, not water to the material. Mix the material for at least 5 minutes to obtain a mixed material with consistency that meets project specifications. Water quantity can be adjusted to obtain a flooring screed with the right consistency meeting project specifications.

## Application

ARDIYYA-L400 may be directly bonded to the base or laid unbonded onto a suitable damp-proof membrane which is placed over the slab. Also, it may be applied over a layer of rigid insulation material.

Pour the mixed material on the floor surface and spread to the desired thickness ranges between 30 to 100 mm using a trowel or appropriate tools.

The screed may be left as finished or floated to produce a smooth surface on which to lay the specified flooring finish.

## Curing

Freshly applied surfaces need to be protected from direct sunlight, wind and extensive heat for 3 to 5 days. Keep doors and windows closed. Cure the applied ARDIYYA-L400 by spraying clean potable water 2 to 3 times daily for 3 to 5 days.

In hot or dry weather care should be taken to prevent the screed from stiffening or drying out to an extent that may prevent thorough compaction. After compaction and finishing, the surface should not be allowed to dry out quickly. This can be achieved by protection with plastic sheets or other suitable means for at least 5 days. The sheets must overlap each other by at least 10 to 20 cm, while the edges and ends are folded upwards by 10 cm onto the pillars and walls. Once the period for curing the surface has elapsed, the sheeting should be removed to enable the levelling screed to dry normally.

## Precautions & Limitations

ARDIYYA-L400 should be used for internal applications only. It is not for external applications. Protect ARDIYYA-L400 from direct sunlight, wind and rain during application. Do not apply ARDIYYA-L400 at an ambient temperature lower than 5° C or greater than 35° C. Do not re-temper the mixed material. Do not mix ARDIYYA-L400 with any other material not recommended by Saudi Readymix. Clean the tools with water before product hardening. In case of hardening, tools should be cleaned mechanically.

Saudi Readymix bears no responsibility for the defects due to the improper or non-recommended use of the product. For further information contact Saudi Readymix.

### Legal Disclaimer:

*The terms and conditions of Saudi Readymix legal disclaimer applies and are an integral part of this product data sheet. Please refer to the legal disclaimer document for further information.*

## Storage

Bags should be kept sealed, placed on wooden pallets above ground level and covered by a waterproof tarpaulin.

## Health & Safety

Since ARDIYYA-L400 is a cement-based product so it is a highly alkaline material. Care should be taken during the use and storage of ARDIYYA-L400 to avoid direct contact with eyes and skin. The use of protective gloves and goggles during application is recommended. Wash the skin with soap and water in case of contact. In case of contact with eye, wash immediately with plenty amount of clean water and seek medical advice. ARDIYYA-L400 is a noncombustible material as per BS EN 13501-1 (Class A1).