



# ACS Engineered Speed Screed

## CONSTANT PERFORMANCE

### DESCRIPTION

ACS Engineered Speed Screed is a pre-blended, rapid set, engineered screed mixture for the installation of cementitious screeds and beds. The rapid cure allows floor coverings to be installed faster than using traditional sand/cement screeds.

ACS Engineered Speed Screed is suitable for internal and external floor applications, including balconies, bathroom floors and shower bases, in both bonded and un-bonded screed applications.

### FEATURES AND BENEFITS

- Premixed, single component system – just add clean water on site.
- Quick setting allowing placement of tiles from 4 hours for ceramic tiles.
- Quick and easy to apply – provides a simple solution to the end user.
- Available in 20kg bags allowing for ease of transfer of product on site and minimising waste. Simply transfer excess stock to the next project.
- Suitable for thin and thick bed applications – no need for multiple products.
- Add ACS Prime & Bind for bonded screed and enhanced performance.

### RECOMMENDATIONS

- Suitable for use under ceramic tiles, natural stone and Terazzo after 4 hours cure.
- Suitable for use under resilient and textile floor coverings after 24 hours cure.

### GUIDELINES FOR COVERAGE

- Suitable for use under timber and parquet floors after 48 hours cure.
- Suitable for use under water based waterproofing membrane systems after 24 hours cure, prior to fixing of relevant and compatible floor coverings.
- Suitable for use as a screed under most under floor heating systems. ACS Engineered Speed Screed can also be used as a screed bed over certain underfloor heating systems. Contact ACS Technical Services for more detailed information.

Special notes for use over the following:

- On wooden, rubber, or metal substrates, Engineered Speed Screed should be applied as an unbonded screed, with a minimum bed thickness of 40mm and it must be reinforced with an appropriate wire mesh.
- Contact ACS Technical Services for information on using ACS Engineered Speed Screed over other surfaces not mentioned in this technical data sheet.

### PACKAGING

ACS Engineered Speed Screed is available in 20kg paper bags.

### CONSUMPTION

Approximately 2kg per m<sup>2</sup> per mm of screed thickness. 20kg of ACS Engineered Speed Screed will cover approximately 1m<sup>2</sup> at a thickness of 10mm. Actual surface texture may effect the overall coverage.

For guidance, the table below provides estimated coverage for ACS Engineered Speed Screed and ACS Prime & Bind for various applications. Surface types and application variations may cause departures from these consumption

| Application             | Application Details                                                                                            | Cover Estimate (smooth surface) m <sup>2</sup> /litre (mix) | Cover Estimate (rough surface) m <sup>2</sup> /litre (mix) | Litres ACS Prime & Bind needed (mix) |
|-------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------|--------------------------------------|
| Cement Slurry Bond Coat | 1:1 (v/v) ACS Prime & Bind/water mixture, 2 litres of mixture added to 4kg cement.                             | 4                                                           | 2                                                          | 1                                    |
| Priming                 | Neat (direct from container)                                                                                   | 4                                                           | 2                                                          | 1                                    |
| Priming                 | 1:1 (v/v) ACS Prime & Bind/water mixture                                                                       | 16                                                          | 8                                                          | 0.5                                  |
| Priming                 | 1:2 (v/v) ACS Prime & Bind/water mixture                                                                       | 24                                                          | 12                                                         | 0.33                                 |
| Screed Admixture        | 1.8-2.1 litres of 1:1 (v/v) ACS Prime & Bind/ water mixture added to 20kg screed, 10mm screed layer thickness. | (1:1)                                                       | (1:1)                                                      | 1                                    |

| TECHNICAL PROPERTIES                                   |                                                                                                                                                                                                                        |                        |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Form:                                                  | Grey Powder                                                                                                                                                                                                            |                        |
| Bulk Density:                                          | 1850 kg/m <sup>3</sup> (1.85 kg/L)                                                                                                                                                                                     |                        |
| Water Mix Ratio:                                       | 1.6 litres per 20kg                                                                                                                                                                                                    |                        |
| Consistency:                                           | Homogeneous Paste                                                                                                                                                                                                      |                        |
| Fresh Wet Mix Density:                                 | 2180 kg/m <sup>3</sup> (2.18 kg/L)                                                                                                                                                                                     |                        |
| Coverage:                                              | 1 m <sup>2</sup> /bag per 10mm thickness                                                                                                                                                                               |                        |
| Application Temperature:                               | 5°C to 35°C                                                                                                                                                                                                            |                        |
| Setting Time:                                          | Initial Set – approx 40 minutes<br>Final Set – approx 60 minutes                                                                                                                                                       |                        |
| Working Time:                                          | 20- 30 minutes                                                                                                                                                                                                         |                        |
| Walkability:                                           | 4 hours                                                                                                                                                                                                                |                        |
| Compressive Strength:<br>(Mixed with water)            | 4 hours                                                                                                                                                                                                                | 6.5 MPa                |
|                                                        | 8 hours                                                                                                                                                                                                                | 10.3 MPa               |
|                                                        | 24 hours                                                                                                                                                                                                               | 21.1 MPa               |
|                                                        | 7 days                                                                                                                                                                                                                 | 24.1 MPa               |
|                                                        | 28 days                                                                                                                                                                                                                | 36.5 MPa               |
| Compressive Strength:<br>(Mixed with ACS Prime & Bind) | 24 hours                                                                                                                                                                                                               | 20.7 MPa               |
|                                                        | 7 days                                                                                                                                                                                                                 | 29.5 MPa               |
|                                                        | 28 days                                                                                                                                                                                                                | 35.6 MPa               |
| Flexural Strength:<br>(Mixed with water)               | 24 hours                                                                                                                                                                                                               | 3.8 MPa                |
|                                                        | 7 days                                                                                                                                                                                                                 | 4.6 MPa                |
|                                                        | 28 days                                                                                                                                                                                                                | 4.9 MPa                |
| Flexural Strength:<br>(Mixed with ACS Prime & Bind)    | 24 hours                                                                                                                                                                                                               | 5.4 MPa                |
|                                                        | 7 days                                                                                                                                                                                                                 | 8.4 MPa                |
|                                                        | 28 days                                                                                                                                                                                                                | 9.6 MPa                |
| Application Thickness:                                 | Bonded Screed –                                                                                                                                                                                                        | Min 25 mm<br>Max 70 mm |
|                                                        | Un-bonded Screed –                                                                                                                                                                                                     | Min 40 mm<br>Max 70 mm |
| Time to installation:                                  | Ceramic & Natural Stone – 4 hours<br>Resilient & Textile Flooring – 24 hours<br>Timber & Parquetry – 48 hours<br>Waterproofing Membrane – 24 hours<br>(ideally when Engineered Speed Screed is < 2% residual moisture) |                        |
| Residual Moisture Content:                             | 24 Hours – < 2%                                                                                                                                                                                                        |                        |
|                                                        | 28 Days – < 1.5%                                                                                                                                                                                                       |                        |

## CONCRETE FLOOR PREPARATION

### Substrate Preparation

Concrete floors must be structurally sound, clean and dry. Surface must be free from dust, dirt, wax, grease, asphalt, latex and gypsum compounds, adhesives, paint, curing and sealing compounds and other contaminants which may act as a bond breaker. Concrete must be free from laitance, efflorescence and not be subject to hydrostatic pressure.

Moisture levels in the background substrate are important within the framework of the total flooring system being installed. In the information below, detailed data is supplied in relation to moisture levels in the ACS Engineered Speed Screed, prior to installation of the different floor coverings over it.

As for the background concrete substrate, we would recommend that the following guide be used as the basis for ensuring moisture levels are not too high. Concrete subfloors must be sufficiently cured, such that when tested in accordance with test method A3.1.2 “Relative humidity insitu probe test” per ASTM F2170 in AS1884:2021 shall exhibit a relative humidity not exceeding 75%. Cementitious substrates, such as concrete, must not be subject to shrinkage after the installation of ACS Engineered Speed Screed.

AS3958.1-2007 (Ceramic Tiles-Part 1: Guide to the installation of ceramic tiles) gives guidance on the types of concrete surface finish applicable to various tile fixing methods. It also provides guidance on the waiting period required for new concrete. Table 4.3 from AS3958.1 is shown below.

### PRIMING

If placing ACS Engineered Speed Screed directly onto concrete floors, prime with ACS Prime & Bind.

## CONCRETE FLOOR PREPARATION

TABLE 4.3 ex AS3958.1-2007 (Ceramic Tiles-Part 1: Guide to the installation of ceramic tiles)

| Fixing Method |                        |        | Applicability of Finish |             |              | Minimum Drying time of Concrete | Maximum Variation in Plane of Concrete |
|---------------|------------------------|--------|-------------------------|-------------|--------------|---------------------------------|----------------------------------------|
| Fixative      | System                 | Screed | Wood Float or Broom     | Power Float | Steel Trowel |                                 |                                        |
| Mortar        | In Situ Underlay       | Yes    | Yes                     | Yes         | Yes          | 4 weeks                         | 5mm in 3m                              |
|               | Separating Layer       | Yes    | Yes                     | Yes         | Yes          | 4 weeks                         | 5mm in 3m                              |
|               | Sand/Cement Mortar Bed | Yes    | Yes                     | No          | No           | 6 weeks                         | 20mm in 3m                             |
| Adhesive      | Thick Bed              | Yes    | Yes                     | Yes         | No           | 6 weeks                         | 10mm in 3m                             |
|               | Thin Bed               | Yes    | Yes                     | Yes         | No           | 6 weeks                         | 5mm in 3m                              |
|               | In Situ Underlay       | Yes    | Yes                     | Yes         | No           | 4 weeks                         | 5mm in 3m                              |

Use of ACS Engineered Speed Screed & ACS Prime & Bind on new concrete surfaces should be governed by the criteria shown in Table 4.3 from AS3958.1-2007.

## MIXING

**Machine Mixing:** Place the ACS Engineered Speed Screed into the mixer, then add according to desired consistency, 1.6 - 1.8 litres of clean water per 20kg bag of ACS Engineered Speed Screed. Mix thoroughly for 3 - 5 minutes.

**Drill Mixing:** Place according to desired consistency, 1.6 - 1.8 litres of clean water into a clean container and slowly add 20kg of ACS Engineered Speed Screed while slowly mixing with a low-speed mixer. Mix thoroughly to a smooth, homogeneous consistency.

**Hand Mixing:** Place the ACS Engineered Speed Screed into a wheelbarrow or onto a clean solid surface, then add 1.8 litres of clean water per 20kg bag of ACS Engineered Speed Screed. Mix with a shovel until a uniform consistency is achieved.

**Mixing with ACS Prime & Bind:** Place the ACS Engineered Speed Screed into the mixer, then add 1.8 litres of ACS Prime & Bind per 20kg bag of ACS Engineered Speed Screed. Mix thoroughly for 3 - 5 minutes.

## APPLICATION

Place the mixed product onto the area to be screeded and screed to the desired thickness and plane using an appropriate straight edge. Apply the desired surface finish using a wooden or plastic float.

**Bonded Screeds:** Apply a primer coat of ACS Prime & Bind on to the substrate. Place the mixed ACS Engineered Speed Screed onto the bond coat while it is still wet. Apply the finish as described previously.

**Note:** ACS Engineered Speed Screed should be carefully applied at a minimum thickness of 25mm per application for bonded screeds, and 70mm maximum thickness.

**Un-bonded Screeds:** Apply the mixed ACS Engineered Speed Screed onto a polyethylene film, building paper, waterproofing membrane etc. and finish as described previously. The minimum bed thickness should be 40mm, and the maximum thickness should be 70mm. For any applications where the screed may be subject to higher loads and point loads, mix ACS Engineered Speed Screed with ACS Prime & Bind.

Discard any material that has exceeded the pot life or working time of the product.

## INSTALLING CERAMIC TILES, RESILIENT FLOORS, TIMBER, AND TEXTILE COVERINGS

Installation of floor coverings should take place after the appropriate cure time – refer to the Technical Data for the relevant adhesive system. In determining when the laid ACS Engineered Speed Screed is suitable for the installation of different flooring materials, the following guidance is presented based on Australian Standards. Take particular note to the requirement for residual moisture levels in both the screed and background substrate.

## TEXTILE FLOOR COVERINGS

Installation should be in accordance with AS2455.1:2007 Textile Floor Coverings – Installation and Practice (Covers products like carpets). It is important to ensure that ACS Engineered Speed Screed when tested in accordance with the hygrometer test per Appendix B2.2 in AS2455.1: 2007, shall exhibit a relative humidity not greater than 70%.

## RESILIENT FLOOR COVERINGS

Installation should be in accordance with AS1884:2012 Floor Coverings Resilient Sheet and Tile – Installation Practices (Covers products like linoleum, vinyl). It is important that ACS Engineered Speed Screed when tested in accordance with test method A3.1.2 “Relative humidity insitu probe test” per ASTM F2170 in AS1884:2021 shall exhibit a relative humidity not exceeding 75%.

## CERAMIC TILES

Installation should be in accordance with AS3958.1 : 2007 Ceramic Tiles Part1-Guide to the Installation of Ceramic Tiles. It is important to ensure that ACS Engineered Speed Screed when tested in accordance with test method B5 “Electrical Resistance Test” in AS3958.1: 2007 shall exhibit a moisture content of no greater than 5.5%.

## TIMBER & PARQUETRY COVERINGS

If ACS Engineered Speed Screed is to be used under timber or parquetry, it is important that the instructions on the timber floor adhesive be followed in detail. Note that many timber floor adhesives require the application of a Moisture Vapour Barrier, prior to installation. This can take place after the screed and concrete slab beneath it have achieved the following level of dryness. As a guide, concrete subfloors must be sufficiently cured, such that when tested in accordance with test method A3.1.2 “Relative humidity insitu probe test” per ASTM F2170 in AS1884:2021 shall exhibit a relative humidity not exceeding 75%. Accordingly, after the application of ACS Engineered Speed Screed, it must also meet the same requirements for dryness.

## WATERPROOFING MEMBRANES

ACS Engineered Speed Screed is only suitable for application over and under water based and cementitious membranes. As a guide, application of ACS Engineered Speed Screed over a membrane should take place when the membrane has fully through dried (refer to manufacturer’s instructions). For application of a waterproofing membrane over ACS Engineered Speed Screed, we recommend allowing cure for 24 hours, ideally, when the screed has reached < 2% moisture. Ambient temperatures can change this timeframe.

## MOVEMENT JOINTS

It is essential that movement joints are carried through from the background substrate, right through to the face of the tile covering. Refer to AS 3958.1 - 2007 for guidance on design and construction of movement joints.

## TEMPERATURE CONSIDERATIONS

The interaction between cement and water is temperature sensitive. The set time is delayed at low temperatures and is accelerated at high temperatures. To avoid significant change in setting times, the recommended product, water, ambient and substrate temperature ranges are:

Product – keep out of direct heat or cold. Try and ensure product is between 15 – 25°C.

Water – try and ensure mix water is between 15 – 25°C.

Ambient – Do not apply at a temperature less than 5°C or above 35°C.

Substrate – Do not apply onto a surface which has a temperature less than 5°C or above 35°C.

## CLEAN UP

Clean all tools and equipment with water before the screed dries. When hardened the product may require mechanical or chemical removal. Chemical removal is best done using a proprietary concrete cleaner (usually acid based) – follow safety instructions for the product.

## OPEN TO TRAFFIC

Floors are ready to receive light foot traffic after approximately 3 Hours.

## STORAGE

Stored in original, unopened packaging, in cool, dry conditions, ACS Engineered Speed Screed will keep for 6 - 12 months. Storing in areas of high humidity or excess moisture may affect the contents and shorten shelf-life.

## HEALTH AND SAFETY

During use, avoid inhalation of dust and contact with the skin and eyes. Wear suitable clothing, gloves, eye protection and respiratory protective equipment. If contact with the skin occurs, thoroughly clean the area with plenty of fresh water and soap. In case of contact with the eyes rinse with plenty of fresh water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting. For further information consult the Safety Data Sheet (SDS) and read the product label carefully before use. SDS documents are available by phoning 1800 077 744.



CONSTANT PERFORMANCE

For further information consult the Material Safety Data Sheet and read the product label carefully before use. Material Safety Data Sheets are available by phoning 1800 077 744.

### PLEASE NOTE

The information given in this data sheet is based on our current knowledge of the product when properly stored, handled and applied. We cannot guarantee that the product will be suitable, effective or safe when used for any purpose other than its stated uses.

To the extent that it is lawful, we exclude warranties implied by law and limit our liability to the cost of replacing the product. We accept no responsibility for loss or injury caused by improper use, incompetent preparation, inexperienced or negligent application, or ordinary wear and tear.

Service or advice given by our staff should not amount to responsibility for the project - since the owner, or their contractor (and not River Sands), is responsible for procedures relating to the application of the product.

APPLIED CONCRETE SOLUTIONS  
A Division of River Sands Pty Ltd

Corner Riverland and Monte-Khoury Drive,  
Loganholme QLD 4129, Australia

Brisbane: (07) 3412 8111  
Sydney: (02) 9677 1056  
Melbourne: (03) 9311 9225  
Perth: 0423 023 164

Toll Free Helpline: 1800 077 744  
[www.appliedconcretesolutions.com.au](http://www.appliedconcretesolutions.com.au)