BCI BUILDING CHEMISTRY INDUSTRY

Method Statement for Concrete Screed Slop

1. Purpose

The purpose of this method statement is to define the procedure for preparing, mixing, and placing foam concrete screed to create a sloped surface of 1% for proper drainage. The screed will be of **2500 psi** strength and will incorporate **3/4" aggregates**. The thickness will be an average of **8 cm** across the surface.

2. Scope of Work

This method statement covers the following:

- Surface preparation
- Material preparation and mixing
- Casting and application of foam concrete screed
- Curing and finishing
- Safety and quality control measures

3. Materials

- **Foam Concrete**: 2500 psi (high-strength), with **3/4" aggregate**. It will be mixed with foam to reduce weight while maintaining strength.
- **Cement**: Ordinary Portland Cement (OPC) or as specified.
- **Fine Aggregates**: Clean sand, free of dust and impurities.
- **Water**: Clean and potable water.
- **Foam Additive**: For the production of foam concrete.
- **Bonding Agent** (if required): For adhesion to existing surfaces.
- **Plasticizer**: If necessary, for enhanced workability.
- **Curing Compound**: To prevent premature drying.
- **Reinforcement (if needed)**: Steel reinforcement or mesh for areas with heavy load requirements (check project specification).

4. Equipment and Tools

- **Concrete Mixer**: For mixing foam concrete.
- **Screeding Rails**: For setting the slope and thickness of the screed.
- **Laser Level or Spirit Level**: To check the slope.
- **Trowels and Floats**: For smoothing and finishing the surface.
- **Vibrator**: For consolidating the foam concrete mix (if necessary).
- **Measuring Tape**: For measuring dimensions and checking slope.
- **Wheelbarrows**: For transportation of materials.

- **Protective Equipment**: PPE including gloves, goggles, masks, and safety shoes.
- **Curing Covers**: To cover the screed for curing.

5. **Safety Considerations**

- Ensure all workers are equipped with **PPE**, including gloves, goggles, face shields, and dust masks.
- Ensure the work area is properly cordoned off to avoid accidents and unauthorized access.
- Follow all safety guidelines for handling foam and cementitious materials.
- Provide adequate ventilation when working with foam concrete additives.
- Ensure safety equipment such as fire extinguishers and first aid kits are accessible.
- Follow proper lifting techniques when handling heavy materials like cement and aggregates.

6. **Methodology**

6.1. Surface Preparation

1. **Clean the Substrate**: The surface to receive the screed must be free of debris, oil, dust, and any loose material. Ensure the surface is clean and roughened (if necessary) to enhance adhesion.
2. **Apply Bonding Agent (if required)**: If the screed is being applied over a non-porous or old surface, apply a suitable bonding agent as per the manufacturer's instructions. Allow sufficient time for the bonding agent to set.
3. **Set Screed Rails**: Place the screed rails or guide rails along the surface to establish the correct slope and thickness. The desired slope is **1%** (1 cm rise for every 100 cm of horizontal distance). Check the level using a **laser level** or **spirit level**.

6.2. Foam Concrete Preparation

1. **Mixing Foam Concrete**:
    - Use a **mechanical concrete mixer** to combine the required quantities of **cement**, **sand**, **3/4" aggregate**, and **water**.
    - Add the **foam agent** to the mix to create the foam concrete, ensuring the desired consistency for easy application and spreading.
    - The mix should achieve a target **compressive strength of 2500 psi**, with the correct air content to maintain lightweight properties.
    - If necessary, use **plasticizers** to improve workability.
2. **Check Consistency**: Ensure the mix is consistent, with no segregation or clumping. It should flow easily but should not be overly liquid.

6.3. Casting and Application of Foam Concrete Screed

1. **Place Foam Concrete**: Start placing the foam concrete screed between the pre-set screed rails, spreading the material uniformly along the length of the surface.
2. **Level and Screed**: Use a **screeding board** or **straightedge** to level the foam concrete mix to the height of the rails. Ensure the thickness of the screed is maintained at an average of **8 cm**. The surface should be kept level and uniform across the entire area.
3. **Achieving the Slope**: While leveling the foam concrete, ensure that the required **1% slope** is maintained for proper drainage. This can be checked using a **laser level** or **spirit level** to verify the slope consistently.
4. **Compact and Vibrate (if necessary)**: If necessary, use a **vibrator** to compact the foam concrete, ensuring proper consolidation and removal of air pockets. However, care should be taken not to over-vibrate, which can compromise the foam structure.
5. **Smooth the Surface**: Use a **trowel** or **float** to finish the surface, ensuring a smooth and uniform finish. The surface can be left rough or smooth, depending on the requirements.

6.4. Curing and Finishing

1. **Curing the Screed**: After application, the foam concrete should be cured for at least **7 days** to allow proper hydration. Use curing compounds or wet hessian cloths to maintain moisture in the screed and prevent premature drying.
2. **Protecting the Surface**: Keep the screed covered with curing blankets or plastic sheeting to prevent excessive evaporation. During curing, ensure the surface is not disturbed.
3. **Final Inspection**: After curing, inspect the surface for any cracks, defects, or imperfections. Address any issues with patching or smoothing, if necessary.

7. **Quality Control**

- **Thickness Measurement**: Use a **measuring tape** or **calipers** to verify that the screed is of uniform thickness and meets the required 8 cm.
- **Slope Measurement**: Ensure the 1% slope is consistent across the entire surface by checking with a **laser level** or **spirit level**.
- **Strength Testing**: Perform **compressive strength tests** to verify that the foam concrete has achieved the target strength of **2500 psi**.

8. Handover and Acceptance

Once the screed has cured, is free from defects, and meets the required specifications (thickness, slope, strength), it will be ready for handover to the next phase of the construction process.

9. References

- Project drawings and specifications
- Manufacturer’s guidelines for foam concrete, bonding agents, and additives
- BS 8204 (Code of Practice for Installation of Flooring)