

TIP SHEETS FOR SCREEDING

Tip Sheet #2

Tip Sheet	
Concrete Screeding – Roller Screed	
<p>Problem:</p> <p>Manual Screeding/Rodding</p> <p>In its simplest form, concrete is a mixture of paste and aggregate (sand and rock). The paste, composed of cement and water, coats the surface of the fine (sand) and coarse aggregates (rocks) and binds them together into a rock-like mass known as concrete. This mixture and the ratios are critical to the workability, integrity and quality of the end product. The increased forces needed to screed/rod and rake can take their toll on the worker. Screeding/rodding is the first step in the process of leveling and smoothing just-poured concrete. In one way or another, screeding/rodding involves pulling a device over the concrete in order to even out and fill in the surface prior to the completion of finer finishing processes such as floating or troweling. The awkward torso bending, high wrist/hand forces could lead to an overuse injury to the back, arm, wrist or hand.</p>	<p>One Solution:</p> <p>Roller Screed (aka, “Striker Screed,” “Spin Screed,” roller tube)</p> <p>The roller screed is a seamless pipe (6’ to 43’ long) that spins in the opposite direction it is pulled. It is powered by a motor and when pulled over a surface between guide rails containing the concrete, the roller screeds off the surplus concrete and evens the surface. The continuous rotation compacts the concrete yet brings mortar up to the surface to facilitate the finishing operation. The lead person operates the power-end while a second worker pulls and guides the other end in unison with the lead. The surface usually requires 3-5 passes before ready for finishing. The roller screed can be used on inclines and with a winch to pull it up hill.</p>



FACTORS:

- ? Lots of forward bending causes awkward torso posture 79% of the time
- ? Neck forward bending 79% of the time
- ? Holding the “rod” (2” x 4” board) requires a pinch grip with extreme wrist flexion.
- ? Repetitive hand/arm activity (exceeds the ACGIH TLV for HAL)
- ? High hand forces are required to pull the “rod” to smooth the concrete.
- ? Frequent arm reaching (greater than 90 degrees) is required.

FACTORS:

- ? The design allows for an upright posture 17% of the time but refers to slightly leaning back – not bending forward
- ? No neck bending
- ? Pinch grips and wrist flexion are eliminated.
- ? Hand arm repetition is reduced to within moderate risk (ACGIH TLV for HAL)
- ? Minimal lifting is required
- ? Heavier models can require up to 170 lbs of pull force to pull the roller back on the first or second swipe inst.
- ? Lifting the roller from section to section may or may not be required (Heavier roller can be a 2-3 person lift and upwards of 70-80 lbs.)

Concrete Screeding

How much does the “Roller screed” cost?

The cost of a “roller screed” is approximately \$7,000 - \$9,000 and requires two operators. The “Spin Screed” costs approximately \$1,100.

What types of jobs are best suited for using the “Roller screed”?

The roller screed can be used on large, wide surfaces with temporary pipe rails to guide it. It can also be used for tilt-up wall panels and long, narrow and open surfaces. Another advantage is that it can be used on up to 45° inclines (with winch)

How much difference does the “Roller screed” make?

It is much faster than manual rodding with better quality screed.

What are the ergonomic features of the “Roller screed”?

Most units have an optional winch system that enables the roller screed to be pulled up inclines. The lighter unit (“Spin Screed”) weighs less than 100 pounds.

Where is it available?

Bunyan Industries
PO Box 651014
Salt Lake City, UT 84165
(801) 255-8064
www.bunyanusa.com

Spin Screed
4932 Lake View Drive
Quincy, Illinois 62305
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