

# Moisture Testing

Subfloors and Underlayments - Resilient \ Concrete \ Moisture Testing



## Moisture Testing

**Moisture** testing is an essential part of determining the suitability of a concrete slab to receive a resilient floor covering. **Moisture** testing must be performed on all concrete slabs regardless of their age or grade level, including areas where resilient flooring has already been installed. **Moisture** testing should be conducted with the area or building at service conditions, i.e. fully enclosed, weather-tight and with the permanent HVAC in operation. In general, **moisture** testing should be conducted on concrete surfaces that exhibit the final prepared stage before the installation of the flooring material and before installation of smoothing or leveling compounds.

Armstrong recommends the following test methods:

- a. **Percent Relative Humidity (RH) in Concrete Slabs - Preferred Method**  
Testing for internal relative humidity of concrete slabs must be conducted in strict accordance with the latest edition of [ASTM F 2170](#), "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes."
- b. **Moisture Vapor Emission (MVER) Test**  
MVER tests must be conducted in accordance with the latest edition of [ASTM F 1869](#), "Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride." When performing these tests, it is important to remove any curing agents or residues down to bare concrete. The calcium chloride tests are to be performed only on ordinary concrete floors and are not applicable on lightweight concrete, smoothing or leveling compounds, gypsum underlayments, or other fills.

Following are Armstrong's maximum allowable **moisture** limits and pH limits:

Commercial Resilient Products	Adhesives	% Internal Relative Humidity	MVER Pounds Per 1,000 ft <sup>2</sup> Per 24 Hours	pH
<a href="#">MEDINTONE</a> , <a href="#">MEDINTECH</a> , <a href="#">MEDLEY</a> , <a href="#">ROYAL</a> , <a href="#">SOLID</a>	<a href="#">S-599</a> and <a href="#">S-240</a>	80	5	5 to 9
	<a href="#">S-543</a> High <b>Moisture</b>	90	5	5 to 11
<a href="#">REJUVENATIONS</a> ( <a href="#">TIMBERLINE</a> , <a href="#">StoneRun</a> , <a href="#">Ambigu</a> ) <a href="#">SAFEGUARD</a> , <a href="#">SAFEGUARD</a> <a href="#">SPA</a>	<a href="#">S-599</a> and <a href="#">S-240</a>	80	5	5 to 9
	<a href="#">S-543</a> High <b>Moisture</b>	90	5	5 to 11
<a href="#">Abode</a>	<a href="#">S-288</a> and <a href="#">S-289</a>	80	5	5 to 9
<a href="#">POSSIBILITIES</a> <a href="#">Petit Point</a> , <a href="#">Connection</a> <a href="#">CORLON</a>	<a href="#">S-599</a> and <a href="#">S-240</a>	80	5	5 to 9
	<a href="#">S-543</a> High <b>Moisture</b>	90	5	5 to 11
Linoleum	<a href="#">S-780</a> and <a href="#">S-240</a>	80	5	5 to 9

Commercial Vinyl Composition Tile (VCT)	<a href="#">S-700</a> and <a href="#">S-750</a>	80	5	5 to 9
	<a href="#">S-515</a> and <a href="#">S-521</a> High <b>Moisture</b>	90	7	5 to 11
SAFETY ZONE	<a href="#">S-700</a> , <a href="#">S-750</a> and <a href="#">S-240</a>	80	5	5 to 9
	<a href="#">S-515</a> and <a href="#">S-521</a> High <b>Moisture</b>	90	7	5 to 11
BioBased Tile	<a href="#">S-521</a> High <b>Moisture</b>	90	7	5 to 11
	<a href="#">S-700</a>	80	5	5 to 9
Natural Creations LVT	<a href="#">S-288</a> and <a href="#">S-240</a>	80	5	5 to 9
	<a href="#">S-543</a> High <b>Moisture</b>	90	7	5 to 11
LUXE Plank	Floating <a href="#">S-288</a>	80	5	5 to 9
Excelon <a href="#">SDT</a>	<a href="#">S-202</a>	75	3	5 to 9
<a href="#">Rubber Tile, Stair Treads and Transition Strips</a>	<a href="#">S-240</a>	80	3	5 to 9

Residential Resilient Products	Adhesives	% Internal Relative Humidity	MVER Pounds Per 1,000 ft <sup>2</sup> Per 24 Hours	pH
Residential Felt-Backed	<a href="#">S-235</a> and <a href="#">S-254</a>	80	5	5 to 9
Residential Vinyl-Backed (StrataMax)	<a href="#">S-288</a> and <a href="#">S-289</a>	80	5	5 to 9
Residential Fiberglass-Reinforced	<a href="#">S-288</a> and <a href="#">S-289</a>	80	5	5 to 9
Residential Tile - Urethane No-Wax and Vinyl No-Wax	<a href="#">S-700</a> and <a href="#">S-750</a>	80	5	5 to 9
	<a href="#">S-515</a> and <a href="#">S-521</a> High <b>Moisture</b>	90	7	5 to 11
Natural Living, Natural Personality LVT	<a href="#">S-288</a>	80	5	5 to 9
Alterna	<a href="#">S-288</a>	80	5	5 to 9
Linoleum	<a href="#">S-780</a>	80	5	5 to 9

All tests must meet the allowable **moisture** limits. Any area that exceeds the allowable **moisture** limit must be further dried to an acceptable level or treated with a **moisture** remediation system before flooring installation. Performance of any third-party **moisture** remediation rests with the manufacturer of that system, not with Armstrong. As a reminder, these tests **cannot predict long-term moisture conditions of concrete slabs**. They are only indicators of **moisture** conditions at the time the tests are conducted.

NOTE: On installations where both the **Moisture** Vapor Emission Rate and Percent Relative Humidity tests are conducted, results for both tests shall comply with the allowable limits listed in the above tables.

