

Radiant Panel Test for Thermal Acoustic Insulation

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**Federal Aviation
Administration**



Sample Substrate Boards

- Numerous high temperature boards are used to place the sample on when testing in the radiant panel.
- They include Kaowool M™ board, Superwool™ 607, Ceraboard 100, or P, Kaowool™ 1260 board, Fermacell, and others.
- The FAA has called out the Kaowool M™ board since the test was first developed. This material has been used at the Tech Center for many years in many capacities.
- The refractory material used to line the chamber, to line the chimney, and in the calorimeter holder does not impact the test. Boards used to “build up” to the proper height for testing in the sliding platform do not impact the test, except for the board the sample is placed on (top board) and, this is only critical when the board is new.

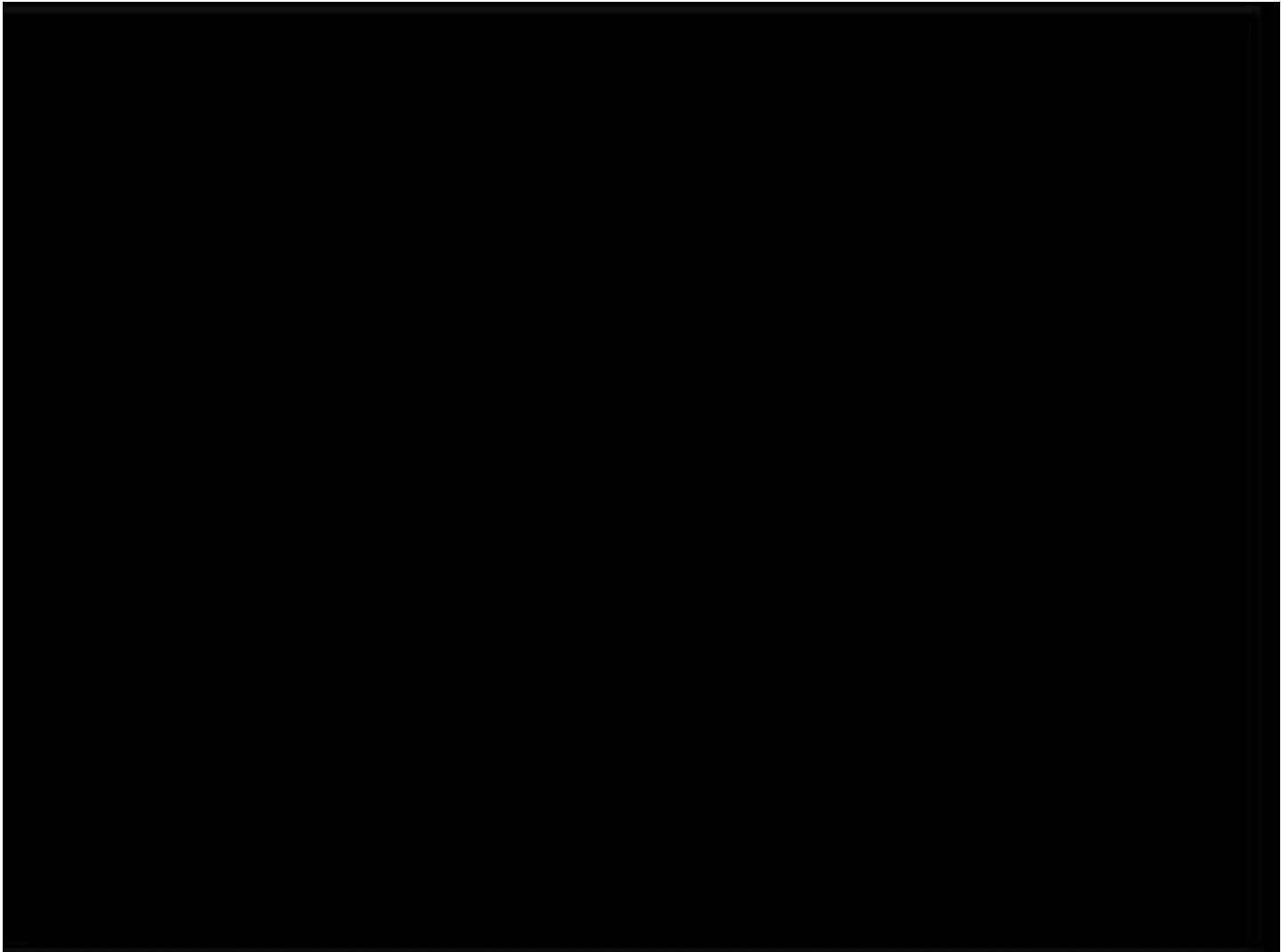
Substrate Board Testing

Substrate Board	Board Heat Treatment	Test Sample	Test Results
Kaowool™ M 3 samples tested	Virgin (contains organic binder on surface)	1 inch (25.4mm) foam	1 after flame failure 2 passes
Kaowool™ M 3 samples tested 3 samples tested	Heat Treated	1 inch (25.4mm) foam	All passes
	Heat Treated	¾ inch (19.1mm) fo	All passes
Superwool™ 607 board 3 samples tested	Virgin (contains organic binder on surface)	1 inch (25.4mm) foam	2 after flame failures 1 pass
Superwool™ 607 board 3 samples tested	Heat Treated	1 inch (25.4mm) foam	All passes
3 samples tested	Heat Treated	¾ inch (19.1mm) foam	All passes

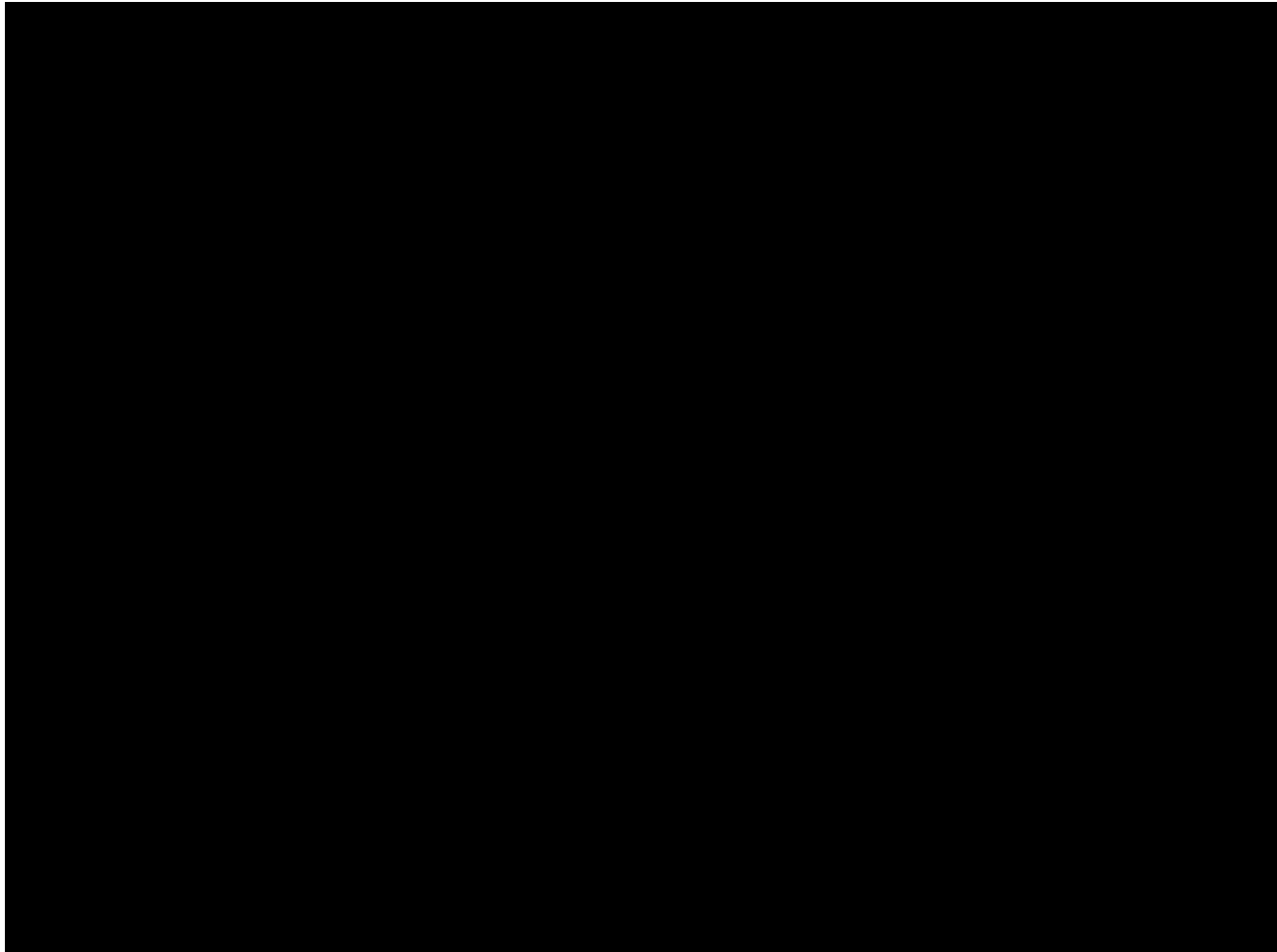
Foam on Superwool 607 Board; New Board



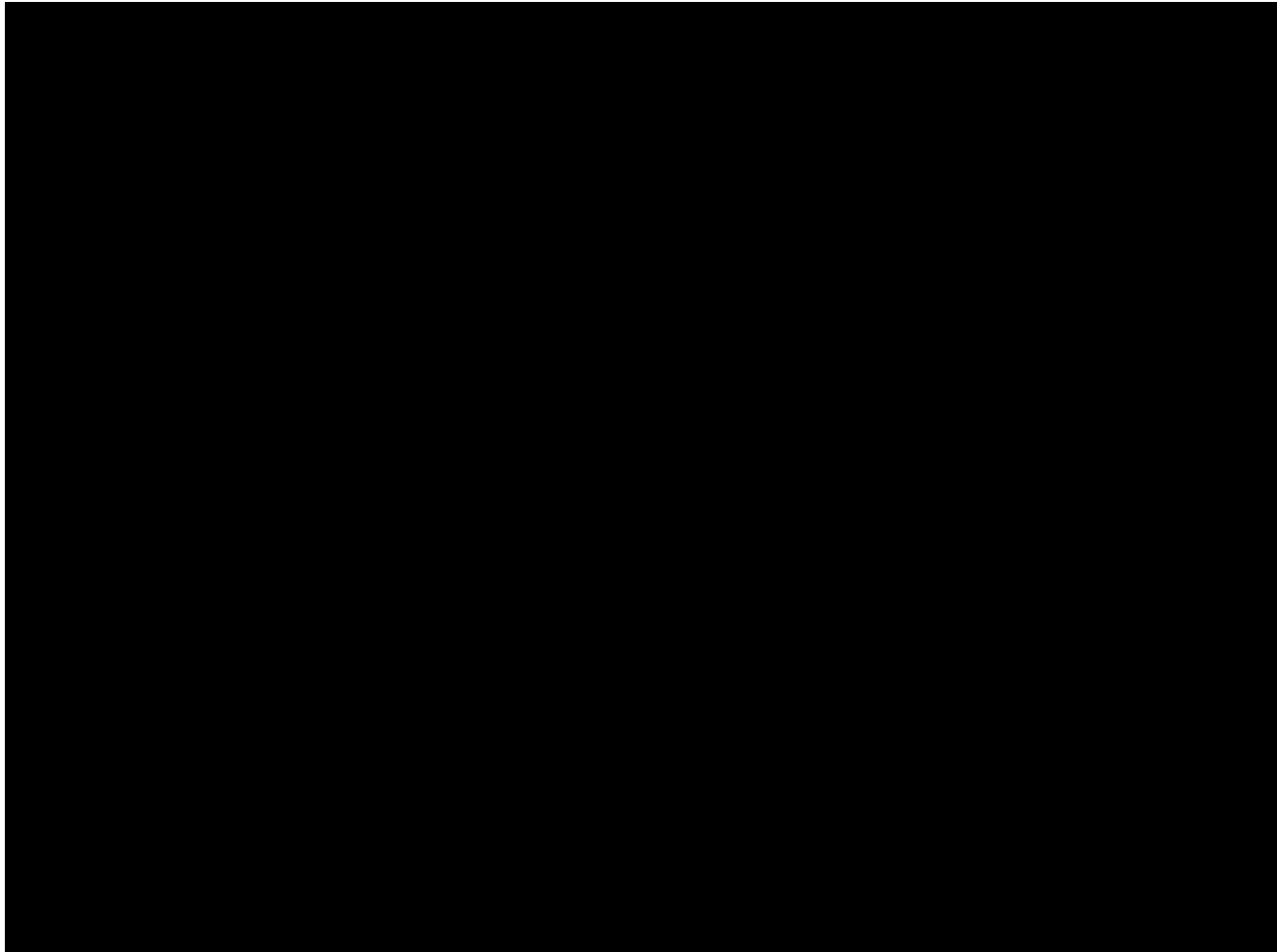
Foam on Superwool 607 Board; New Board



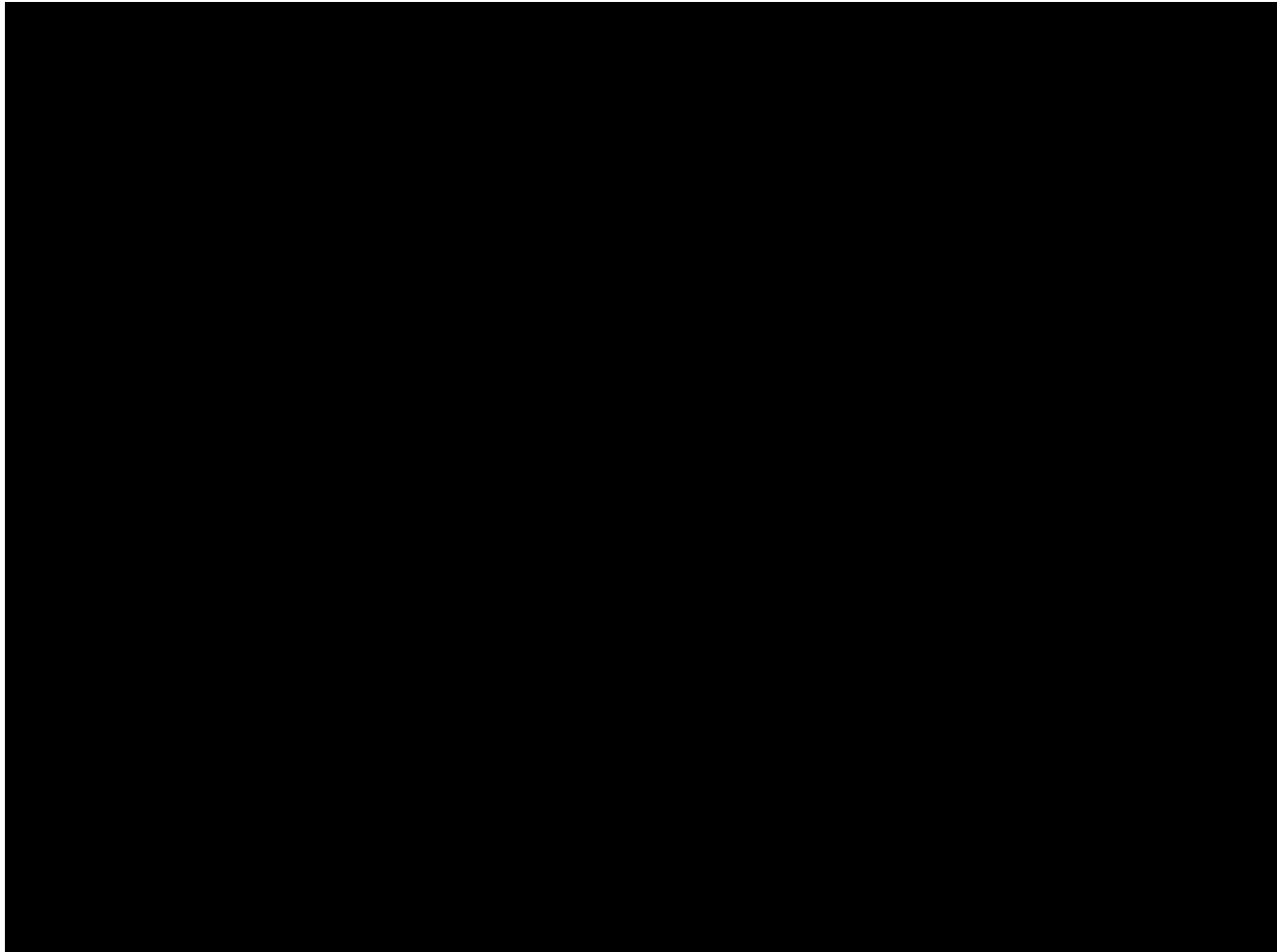
1 inch Foam on Kaowool M-board



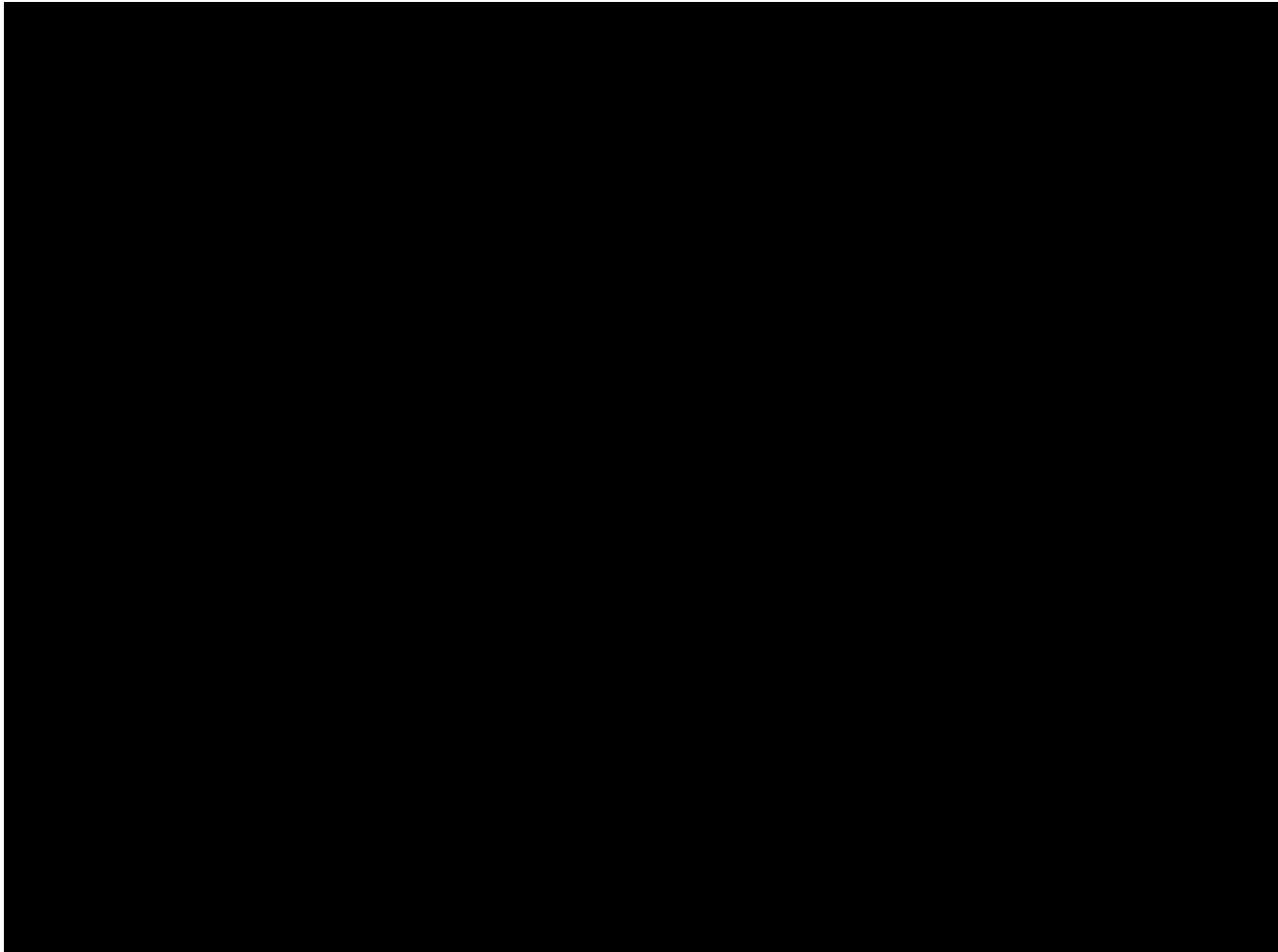
1 inch Foam on Superwool 607 board



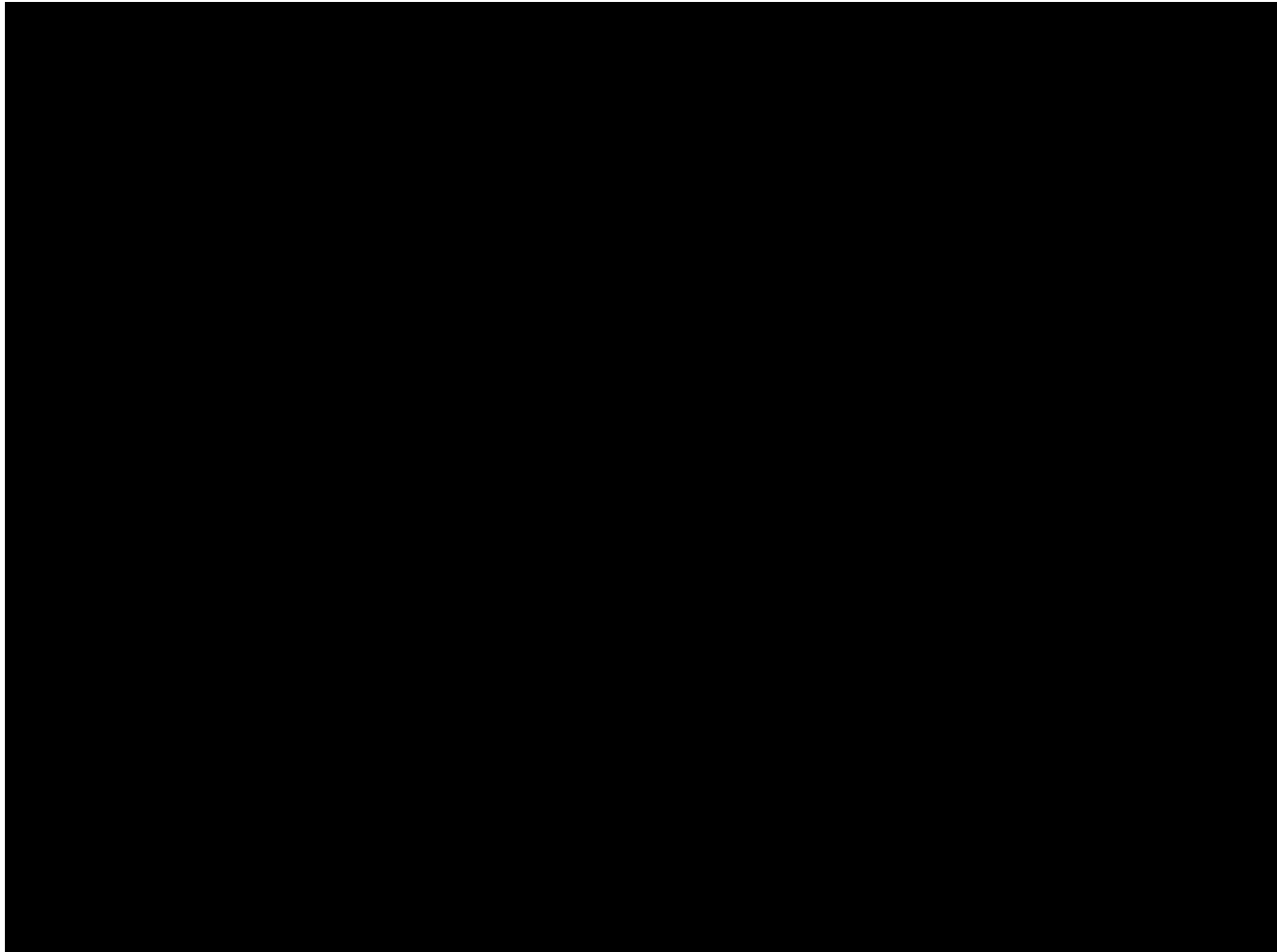
1 inch Foam on Kaowool M-board



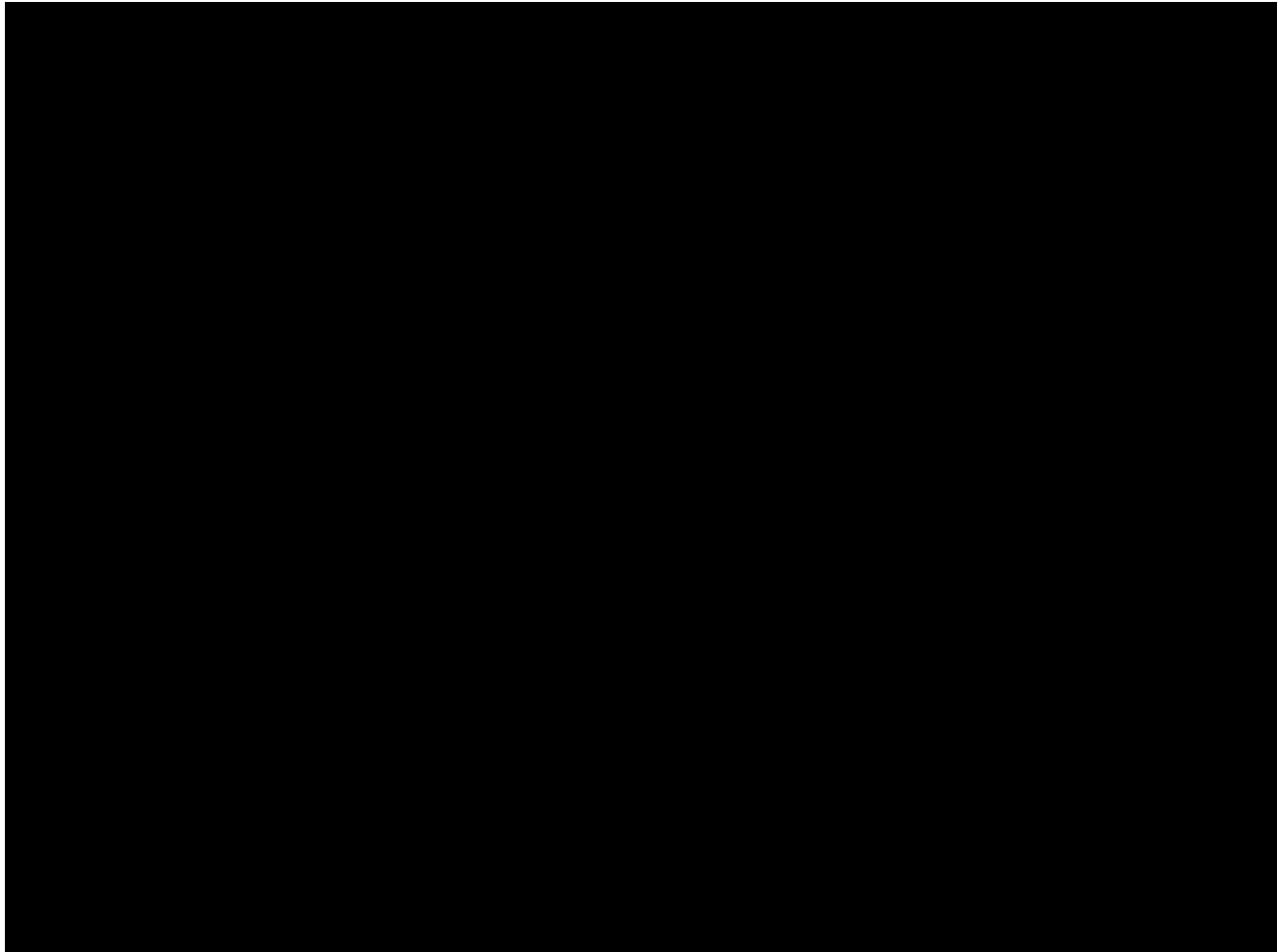
1 inch Foam on Superwool 607 board



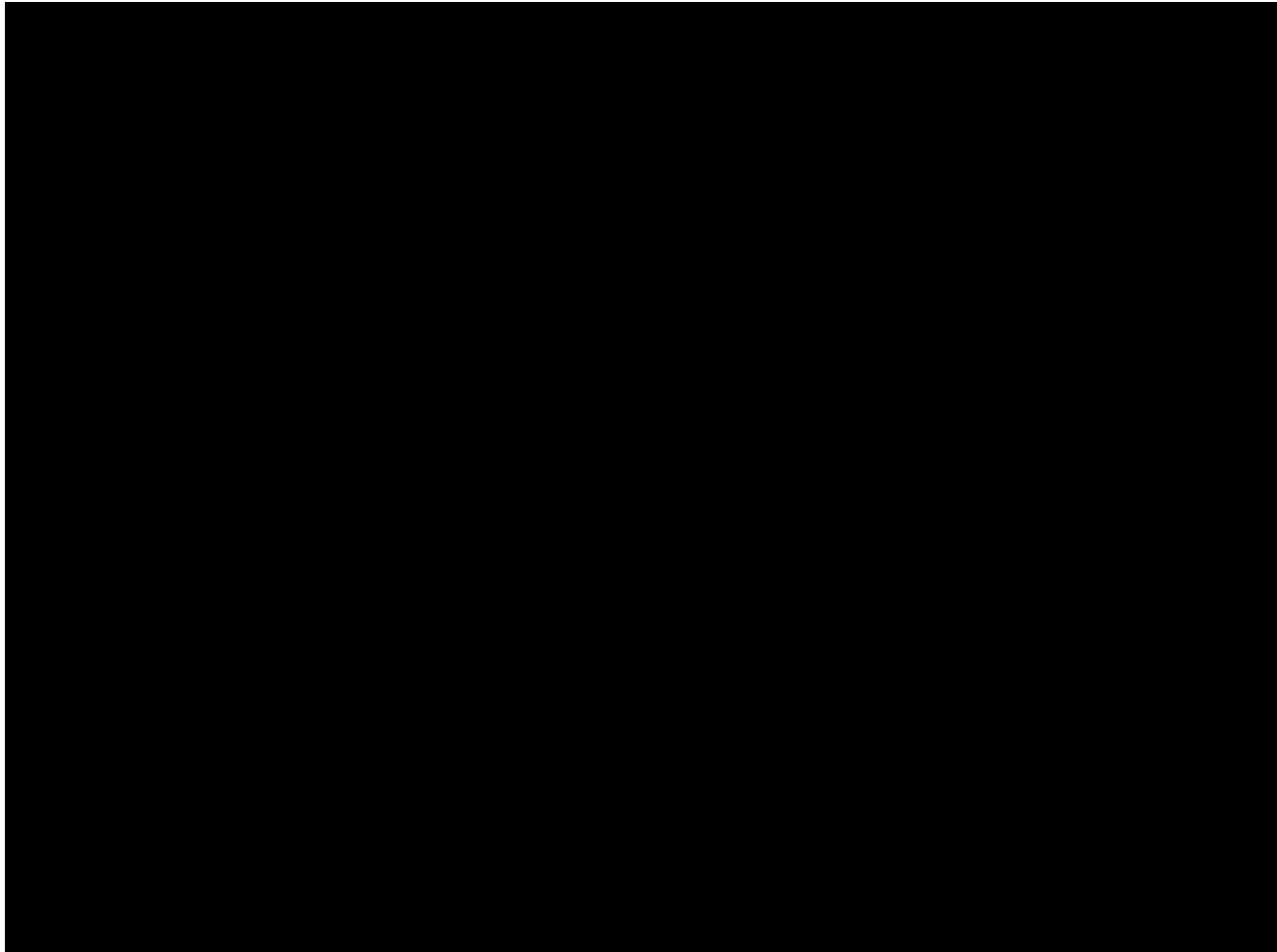
3/4 inch Foam on Superwool 607 board



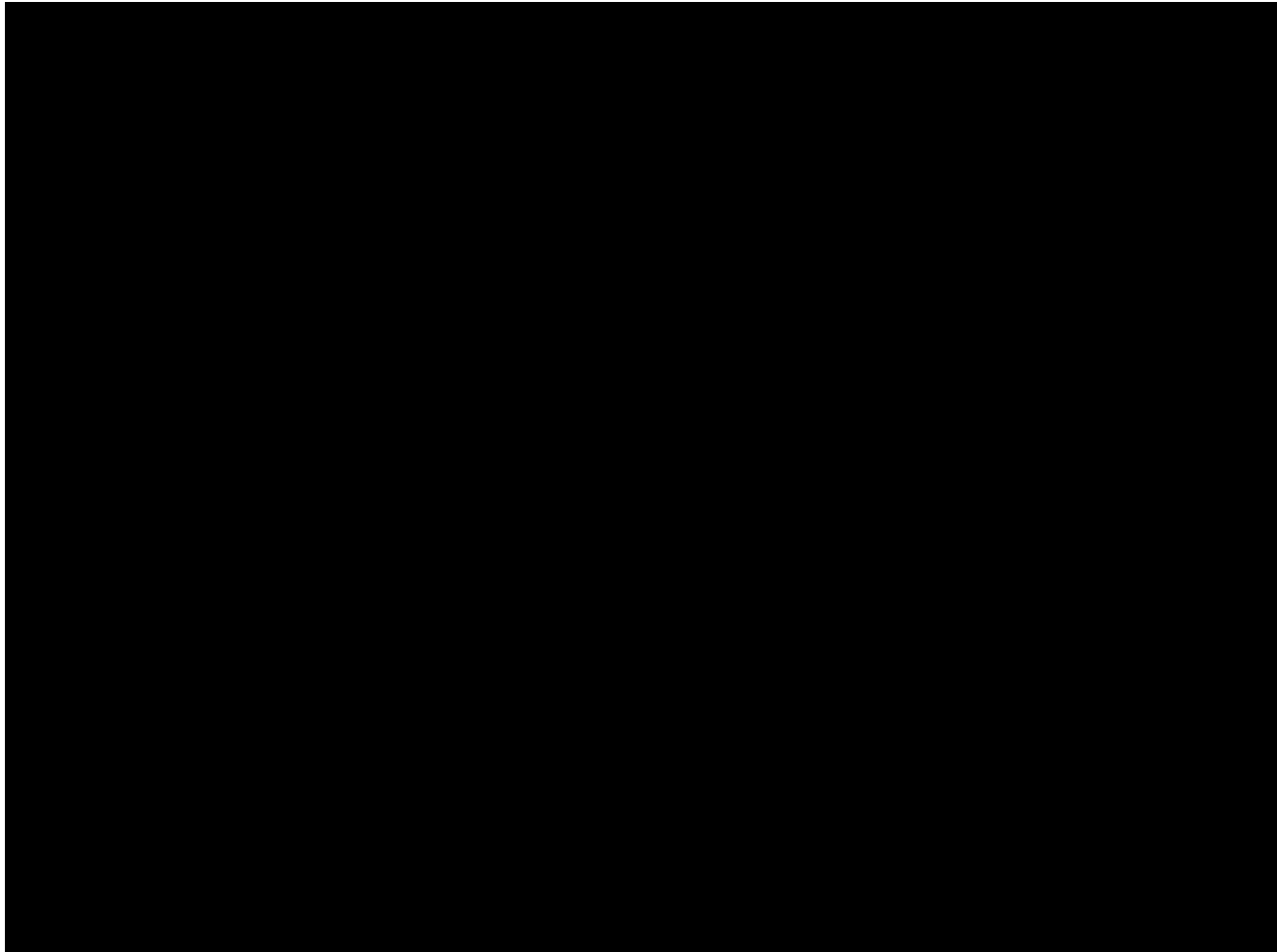
3/4 inch Foam on Kaowool M board



3/4 inch Foam on Superwool 607 board



3/4 inch Foam on Kaowool M board



Superwool® Regulation by Country

(as of June 14, 2012)

	Stance on Superwool	
	European Union (EU)	United States and Canada
Classification of Superwool Family	<ul style="list-style-type: none"> • Alkaline Earth Silicate (AES) • Not RCF 	<ul style="list-style-type: none"> • Alkaline Earth Silicate (AES) • Not RCF
Superwool Status	<ul style="list-style-type: none"> • Fully exonerated from any carcinogen classification in the European Union under the Provisions of Directive 97/69/EC 	<ul style="list-style-type: none"> • Viewed as a nuisance dust • May cause temporary, mild mechanical irritation to the eyes, skin, nose and/or throat
PEL/Regulatory Control	<ul style="list-style-type: none"> • No PEL • Not Regulated 	<ul style="list-style-type: none"> • No PEL • Not Regulated

The Superwool Family of Products are Alkaline Earth Silicate (AES) fibers; Not RCF

Changes for “Down the Road”

- **Changing flame propagation measurement for foams, interface hook and loop, and interface damping materials to measuring the flame propagation (if any) from the left side of the flame profile (fanned out flame) to the left .**
- **We have eliminated the 3-hole calorimeter holder.**
- **Some measurements have been changed to reflect the electric radiant panel test chamber vs. the old air/propane chamber. For example, the sliding platform.**
- **Warp and fill direction testing.**

Round Robin

- **We have not conducted a Thermal Acoustical Insulation Round Robin in more than 4 years ... SO, it's time!**
- **The upcoming Round robin will consist of:**
 - Film cover and tape (Sample A)
 - Film cover and tape (Sample B)
 - Three different double sided tapes (Samples C, D, and E)
 - Foam (hopefully)
- **Information to all participants will be sent out very soon.**
- **We plan on including as many labs as possible.**