

# FIRE AND SOUND MANUAL

AccuCrete®



# Introduction

AccuCrete® Brand Underlayments are manufactured by Arcosa Specialty Materials. We have been mining materials for our construction products for over 40 years. AccuCrete® applicators are in most major markets throughout North America and Canada.

	NexGen®	Prime®	Prepour®	AccuRadiant®	G40®	G50®	H40®
ASTM C472	•	•	•	•	•	•	
ASTM C109							•
PSI Range	2000-3500	2500-4000	up to 2600	3000-4000	3500-5000	4500-6000	up to 7000
Thickness- Minimum to Maximum in a Single Pour	3/8" to 3"	3/8" to 3"	Min 3/4" 3/8" to 2"	Min 3/4" 3/8" to 3"	Featheredge Typical thickness: 3/8" to 1-1/2"	Featheredge Typical thickness: 1/8" to 1"	3/8" to 1-1/2"
ASTM E84 Smoke Developed Fuel Contribution Smoke Density	0	0	0	0	0	0	0
ASTM E119	Meets	Meets	Meets	Meets	Meets	Meets	Meets
Greenguard Gold Certified	•	•	•	•	•	•	•

AccuCrete® and AccuLevel® underlayments are manufactured to rigorous ASTM standards, and have been tested to meet UL 1 and 2 hour fire rated designs. All AccuCrete® and AccuLevel® UL designs incorporate ultra low compressive AccuQuiet Sound Mats.

Section 1207.1 of the 2018 I. B. C. scope applies to common interior walls, partitions and floor/ceiling assemblies between adjacent dwelling units or between dwelling units and public areas.

Section 1201.2 of the 2018 I. B. C. scope applies to airborne sound for walls, partitions and floor/ceiling assemblies must have a sound transmission class (STC) of minimum 50 when tested in accordance with ASTM E90, laboratory test. Minimum 45 if field tested.

Section 1207.3 of the 2018 I. B. C. scope applies to structure borne sound refers to floor/ceiling assembles between dwelling units or dwelling units and a public area must have an impact insulation class (IIC) of minimum 50 when tested in accordance with ASTM E492, laboratory test. Minimum 45 if field tested.

AccuQuiet® D18, AccuQuiet® D25, and AccuQuiet® DX38 are Ultra Low Compression Mats with rigid vibration technology that provide outstanding sound control attenuation and durability . for use in conjunction with AccuCrete® Pourable Gypsum Underlayments.

AccuQuiet® Sound Control Systems are lab tested to meet and exceed I.B.C. standards. We employ lab testing to ensure results can be transferred from job to job. Field testing is used to verify construction, and results are not transferable from job to job.

AccuQuiet® Sound Control Systems offer a cost-effective noise reduction solution for new or renovation construction.

The lab sound tests incorporate 3/4" of AccuCrete Underlayment minimum over AccuQuiet® Sound Mats as thin as 1/4". Most entangled mesh sound mats require a minimum 1". AccuQuiet® Ultra Low Compression provides durability, as thin as 3/4" pour. UL Designs may be proprietary to truss, joist, ceiling dampers, RC-1 or drywall manufacturers. If a single manufacturer is listed in the design, only their products, and those tested in the UL design are permitted. Value engineering is accomplished by changing UL designs which allow for multiple manufacturers. AccuQuiet® and AccuCrete® have proprietary testing with non RC-1 Deluxe manufacturers. Additional tests are available specifically for RC Philips designs. Please contact your local AccuCrete® applicator for details.

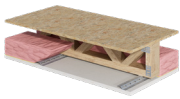
## Acoustical Mat Comparison

The most commonly used acoustical mat is an entangled mesh design. Made of nylon or polypropylene, the curly mesh strands have a significant open space between the strands. The curliness acts as a spring when an impact hits the floor, compressing the mat. Compression is a function of the entangled mesh design, but it creates a problem for the underlayment and so threatens the integrity of the floor.

Under normal loading - live load such as a person walking or dead load such as furniture, the compression means the slab is not fully supported. Less resistance to prevent the underlayment from bending is especially prevalent under highly flexible floor coverings like carpet and vinyl. A crack creates a weak spot, and over time with subsequent loading cracks widen and propagate. This wears out the underlayment, entangled mesh and shortens the life of the floor covering. In short, the entangled mesh system is replaced much earlier than expected.

Acoustical Mat	Gypsum	IIC: Vinyl	IIC: Tile	IIC: Wood Lam.	IIC: Vinyl Plank
1/8" Entangled Mesh	3/4"	50	53	50	51
AccuQuiet D18	3/4"	51	53	55	51
AccuQuiet D18	1"	53	54	59	58
1/4" Entangled Mesh	1"	N/A	54	53	
AccuQuiet D25	3/4"	50	54	57	56
AccuQuiet D25	1"	53	55	59	58
3/8" Entangled Mesh	1"	55	56	55	
AccuQuiet DX38	1"	55	58	59	60

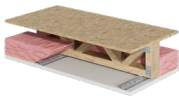
The AccuQuiet® system with an ultra low deflection sound mat with AccuCrete® underlayment are engineered to work together to give the right balance between acoustic performance and durability. The top surface of the AccuQuiet® mat features a semi rigid structural grid supported by discreet contact pillars, approximately 1/4" in diameter. All load transfer goes through these pillars, and the mat has contact with only 5% of the surface area for ultra low contact. The compression occurs in the pillars, which makes the AccuQuiet® mat a stronger spring than entangled mesh- and increases the floor systems durability.



## OPEN WEB/PARALLEL CHORD TRUSS 1 HOUR UL DESIGN

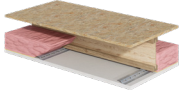
AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number			
											STC	IIC	STC	IIC		
<a href="#">L528</a>	L521	D18, D25, DX38	19.1 mm / 3/4inch	Yes	12" w/o ceiling damper 18" with ceiling damper	Yes	1 layer of 5/8"	Sheet Vinyl	25.4 mm / 1 inch	D18	53		G9540.08-113-11-R1			
<a href="#">L529</a>	L579				12"		Luxury Vinyl Plank	57			G9540.09-113-11-R1					
<a href="#">L534</a>	M500				18"		Luxury Vinyl Plank	58			G9540.10-113-11-R11					
<a href="#">L542</a>	M510				19.1 mm / 3/4 inch 1 inch minimum with sound mat		12"	2 layers 1/2"			Engineered Wood	59	G9540.11-113-11-R1			
<a href="#">L546</a>	M545				12"		Ceramic Tile	54			G9540.12-113-11-R1					
<a href="#">L550</a>					12" w/o ceiling damper 18" with ceiling damper		1 layer of 5/8"	Sheet Vinyl			50	G5325.09-113-11-R1				
<a href="#">L558</a>			12"		Engineered Wood		57	G5325.10-113-11-R1								
<a href="#">L562</a>			12" w/o ceiling damper 18" with ceiling damper		19.1 mm / 3/4 inch		Yes	Yes	2 layers 1/2"	Ceramic Tile	25.4 mm / 1 inch	D25	54		G5325.11-113-11-R1	
<a href="#">L563</a>			18"							Luxury Vinyl Plank			56	G5325.13-113-11-R1		
<a href="#">L574</a>			19.1 mm / 3/4inch		Luxury Vinyl Plank		58	G5325.12-113-11-R1								
<a href="#">L576</a>			LVT		52		G5325.05-113-11-R1									
<a href="#">L581</a>			LVT		58		G5325.04-113-11-R2									
<a href="#">L583</a>			Sheet Vinyl		53		H2989.08-113-11-R0									
<a href="#">L585</a>			Luxury Vinyl Plank		57		H2989.09-113-11-R0									
<a href="#">L587</a>			Luxury Vinyl Plank		58		H2989.10-113-11-R0									
<a href="#">L592</a>			Engineered Wood		59		H2989.11-113-11-R0									
<a href="#">M503</a>			Ceramic Tile		55		H2989.12-113-11-R0									
<a href="#">M508</a>			BARE FLOOR		50		G9530.09-113-11-R1									
<a href="#">M550</a>			Luxury Vinyl Plank		59		G9530.10-113-11-R1									
			Luxury Vinyl Plank		53		G9530.11-113-11-R1									
		Sheet Vinyl	52	G9530.12-113-11-R1												
		Sheet Vinyl	55	H3270.09-113-11-R0												
		Engineered Wood	57	G9530.13-113-11-R1												
		Engineered Wood	59	H3270.12-113-11-R0												
		Ceramic Tile	54	G9530.14-113-11-R1												
		Luxury Vinyl Plank	58	G9530.15-113-11-R1												
		Luxury Vinyl Plank	60	H3270.11-113-11-R0												
		Quarry Tile	53	7012009												
		Sheet Vinyl	59	5012006												
		Sheet Vinyl	51	7012010												
		laminare Flooring	55	7012011												
		Vinyl Plank	51	7012028												





### OPEN WEB/ PARALLEL CHORD 2 HOUR UL DESIGN

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L577</a>	M521	D18, D25, Dx38	19.1 mm/ 3/4inch	yes	12"	yes	3 layers of 5/8"							



### I JOIST 1 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L518</a>		D18, D25, Dx38	19.1 mm/ 3/4inch	yes	9-1/2"	yes	2 layers 5/8"	Sheet Vinyl	19.1 mm/ 3/4 inch	D25		51		H4639.08-113-11-RO
<a href="#">L530</a>	2 layers of 1/2" or 5/8"						LVT	60			H4639.09-113-11-RO			
<a href="#">L570</a>	2 layers of 1/2" or 5/8"						LVT	54			H4639.10-113-11-RO			
<a href="#">L581</a>	2 layers of 5/8"						Luxury Vinyl Plank	50			H4639.11-113-11-RO			
<a href="#">L583</a>	2 layers of 5/8"				Engineered Wood		55	H4639.12-113-11-RO						
<a href="#">L589</a>	2 layers of 5/8"				Ceramic Tile		52	H4639.13-113-11-RO						
<a href="#">M502</a>	2 layers of 1/2" or 5/8"													
<a href="#">M506</a>	2 layers of 1/2" or 5/8"													
<a href="#">M535</a>	2 layers of 5/8"													
<a href="#">M553</a>	2 layers of 5/8"													



### I JOIST 1-1/2 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L547</a>		D18, D25, Dx38	19.1 mm/ 3/4inch	no	9-1/2"	yes	2 layers 1/2"							
<a href="#">M544</a>	yes			2 layers 5/8"										



### I JOIST 2 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L538</a>		D18,D25, DX38	19.1 mm/ 3/4 inch	no	9- 1/2"	yes	3 layers 5/8"							

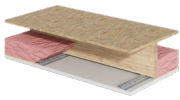


### 2 X 10 WOOD JOIST/ DIMENSIONAL LUMBER 1/2 -3/4 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L506</a>		D18,D25, DX38	19.1 mm/ 3/4 inch	no	10"	no	1 layer 5/8"							
<a href="#">L509</a>	yes			1 layer 1/2"										
<a href="#">L520</a>	yes			1 layer 5/8"										
<a href="#">M504</a>	no			1 layer 5/8"										

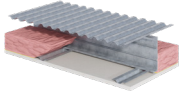






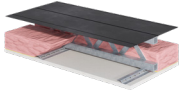
### 2 X 10 WOOD JOISTS/DIMENSIONAL LUMBER 1-1/2 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L211</a>		D18, D25, DX38	19.1mm/3/4"	no	10"	no	insulated ceiling membrane							
<a href="#">L505</a>														
<a href="#">L511</a>														
<a href="#">L536</a>														
<a href="#">L541</a>														
<a href="#">L556</a>														
				yes		yes	2 layers 5/8"							
				no	8"		1 layer 5/8"							



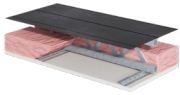
### STRUCTURAL STEEL I HOUR UL DESIGN

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L524</a>		D18, D25, DX38	19.1 mm/ 3/4"	no	7"	no	2 layers 1/2"							
<a href="#">L560</a>				yes	10"	yes	1 layer 5/8"							



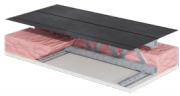
### STEEL TRUSS/ STEEL DECK 1 OR 2 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number												
											STC	IIC	STC	IIC											
<a href="#">G578</a>	G551	D18,D25, DX38	1 inch	Yes	9-1/4"	Yes	1 layer 5/8"																		
<a href="#">G579</a>	G553				9-1/4"		1-2 layers 5/8"																		
<a href="#">G581</a>	G560				8"		1 layer 5/8"																		
<a href="#">G592</a>	G563				10"																				
<a href="#">M513</a>	G566				prefabricated various depths																				
	G574																								
	G587																								
	G597																								



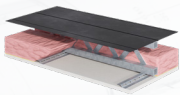
### STEEL TRUSS/STEEL DECK 2 HOUR DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">G577</a>		D18, D25, DX38	25.4 mm/ 1"	yes	9-1/4"	yes	1 layer 5/8"							
<a href="#">G580</a>														
<a href="#">G582</a>														



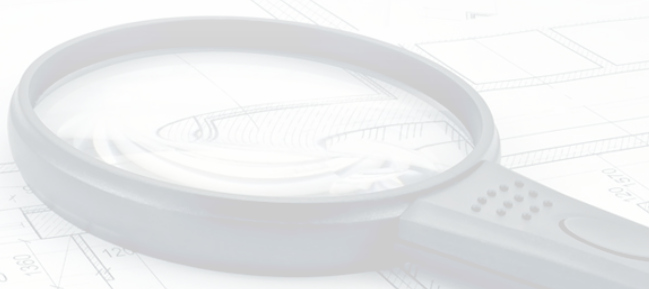
### STEEL JOIST/TRUSS AND PLYWOOD SUBFLOOR I HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L543</a>	L564	D18, D25, DX38	19.1 mm/ 3/4 inch	yes	8"	yes								
<a href="#">L549</a>	L567				various depending upon manufacturer									
<a href="#">L551</a>														
<a href="#">L573</a>														



### STEEL JOIST/PLYWOOD SUBFLOOR 1-1/2 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">L527</a>		D18, D25, DX38	19.1 mm/ 3/4"	no	9-3/8"	yes	2 layers 5/8"							





### PRECAST CONCRETE 1, 2, AND 3 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number	
											STC	IIC	STC	IIC
<a href="#">J917</a>	J991	D18, D25, DX38	1/2" w/o sound mat, 3/4" with sound mat  19.1 mm/ 3/4"	no	normal weight precast concrete	no	no	BARE FLOOR	none	none	56	30	I1394.12-113-11-R0	I1394.13-113-11-R0
<a href="#">J920</a>								7.8 mm LVT	DX38	25.4 mm/ 1 inch	55	50	I1394.14-113-11-R0	I1394.15-113-11-R0
<a href="#">J927</a>								12.7 mm Engineered Wood	DX38	25.4 mm/ 1 inch		51		I1394.16-113-11-R0
<a href="#">J931</a>								7.8 mm Ceramic Tile	DX38	25.4 mm/ 1 inch		51		I1394.17-113-11-R0
<a href="#">J957</a>								Carpet/pad	DX38	25.4 mm/ 1 inch		83		I1394.18-113-11-R0
<a href="#">J958</a>														



### PRECAST CONCRETE 1-1/2, 2, 3 AND 4 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number						
											STC	IIC	STC	IIC					
<a href="#">J994</a>		D18, D25, DX38	2 hour- 1/2" thick underlayment 3 hour- 1" thick underlayment 3 hour- 1/2" thick underlayment 4 hour- 5/8" thick underlayment 2,3 hour- no topping 4 hour- 1/2" thick underlayment	no	8"	no	no												
<a href="#">J991</a>																			



### PRECAST CONCRETE 2, 3, AND 4 HOUR UL DESIGNS

AccuCrete UL Design	Other UL	AccuQuiet Sound Mat	AccuCrete Minimum Thickness	Insulation	Framing Minimum Depth	RC-1	Drywall	Floor Covering	Minimum AccuCrete Thickness	AccuQuiet Sound Mat	Sound Rating		Lab Test Number					
											STC	IIC	STC	IIC				
<a href="#">J919</a>		D18, D25, DX38	19.1 mm/ 3/4"	spray	normal weight precast concrete units													
<a href="#">J924</a>		no	2 hour- no minimum 3 hour- 1/2" thick	no	8"	no	no											
		D18, D25, DX38	4 hour- 3/4" thick															
		no	2 hour- no minimum 3 hour- no minimum					10"										
			4 hour- 1/2" thick															

For more information on any of the UL designs, sound test results, or for any other question, please contact us.

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