

The HSPP recommends respiratory protection whenever exposures on the job exceed the 1 f/cc 8-hour TWA PEL. In addition to those tasks that traditionally exceed the TWA PEL, the HSPP designates specific tasks as jobs (Tables 1 and 2) requiring respiratory protection because of the possibility of exposures above the 1 f/cc level. In the future, if further research and evidence demonstrates a consistent pattern of low exposures, these specific task requirements may be revised.

NAIMA – Helping Contractors Work Safely with Fiber Glass, Rock Wool and Slag Wool

With the establishment of the Health and Safety Partnership Program, NAIMA and its member companies have broadened their commitment to the safety of all those who handle fiber glass, rock wool and slag wool products. The exposure database described above is just one of the many tools created by NAIMA to help builders, installers, specifiers and consumers increase their level of confidence in handling these materials.

NAIMA has also created a free work practice video called “Play It Smart, Play It Safe,” which provides workers with the basic work practice recommendations to follow on the job site. Along with the video is a detailed brochure outlining the specific work practice recommendations as developed by NAIMA in cooperation with OSHA and contractor organizations. The work practice recommendations can be found at www.naima.org. These materials are also available by contacting NAIMA.

About NAIMA

NAIMA is the association for North American manufacturers of fiber glass, rock wool, and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool, and slag wool insulation, and to encourage the safe production and use of these materials.

In May 1999, NAIMA began implementing a comprehensive voluntary work practice partnership with the U.S. Occupational Safety and Health Administration (OSHA). The program, known as the Health and Safety Partnership Program, or HSPP, promotes the safe handling and use of insulation materials and incorporates education and training for the manufacture, fabrication, installation and removal of fiber glass, rock wool and slag wool insulation products.

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NAIMA Member Companies:

CertainTeed Corp.
Valley Forge, PA
Evanite Fiber Corp.
Corvallis, OR
Fibrex Insulations, Inc.
Sarnia, Ontario
Isolatek International
Stanhope, NJ
Johns Manville
Denver, CO
Knauf Insulation
Shelbyville, IN
Industrial Insulation Group, LLC
Brunswick, GA
Owens Corning
Toledo, OH
Rock Wool Manufacturing Co.
Leeds, AL
Rolan Aislantes Minerales, S.A. de C.V.
D.F., México
Roxul, Inc. / Roxul (West) Inc.
Milton, Ontario
Sloss Industries Corp.
Birmingham, AL
Thermafiber, Inc.
Wabash, IN
USG Interiors, Inc.
Chicago, IL

Exposure Data For Fiber Glass, Rock Wool & Slag Wool Under The Health and Safety Partnership Program

The Health and Safety Partnership Program (HSPP) is a cooperative, voluntary program for worker protection developed jointly by the North American Insulation Manufacturers Association (NAIMA), the U.S. Occupational Safety and Health Administration (OSHA) and key contractor organizations. A key element of the HSPP is the establishment of an exposure limit for fiber glass, rock wool and slag wool insulation materials, also known as synthetic vitreous fibers or SVFs. The HSPP sets a voluntary permissible exposure limit, or PEL, of 1-fiber-per-cubic-centimeter (1 f/cc), based on an eight-hour workday. The industry for many years has recommended the 1 f/cc exposure limit based on irritation. Adoption of a voluntary 1 f/cc PEL reaffirms the exposure limit that has been recommended by industry, government and various authoritative bodies for years.

NAIMA Creates Exposure Database

To help contractors and workers determine the level of potential exposure to fiber glass, rock wool or slag wool for a given task, NAIMA has established an exposure database containing existing information about exposure levels categorized by product type and specific work task. NAIMA has analyzed exposure data involving typical exposure levels for many common jobs, which shows that most of these jobs currently can be completed without exceeding the exposure limit of 1 f/cc time weighted average (TWA). The NAIMA exposure database currently includes data collected from a variety of sources, including manufacturers, contractors, academic institutions and third-party organizations.

Contractors Can Rely on NAIMA Database

The HSPP specifically states that contractors are not required to conduct exposure monitoring. Rather, contrac-



Table 1 – Exposure Data

Product Description	Time-Weighted Average (TWA)[*] Exposure Levels (f/cc)^{**}	Product Description	Time-Weighted Average (TWA)[*] Exposure Levels (f/cc)^{**}
Fiber Glass	Mean (Average)	Rock and Slag Wool	Mean (Average)
<i>Acoustical Panel⁴</i>		<i>Batts/Blankets^{1,2}</i>	
Cutting/Sawing with Power Tools	0.03	Installation	0.09
Handling	0.02	<i>High Density Batts²</i>	
<i>Aircraft Insulation⁴</i>		Installation	0.09
Cutting/Sawing with Power Tools	0.06	<i>Ceiling Tiles^{1,2}</i>	
Fabrication/Assembly	0.21	Installation	0.23
<i>Appliance Insulation⁴</i>		<i>Industrial Board/Blanket^{1,4}</i>	
Fabrication	0.12	Removal	0.07
Installation	0.07	<i>Mobile Home Insulation⁴</i>	
<i>Automotive Insulation⁴</i>		Installation	0.13
Fabrication/Assembly	0.03	Cutting/Sawing	0.12
Installation	0.01	Lamination	0.03
<i>Batts/Blankets^{1,4}</i>		<i>Pipe Insulation^{2,3}</i>	
Lamination	0.04	Installation	0.02
Installation	0.13	<i>Safing²</i>	
Cutting/Sawing	0.17	Installation	0.10
<i>Flex Duct⁴</i>		<i>Spray-On Fire Proofing²</i>	
Installation/Assembly	0.02	Installation	0.09
<i>Fiber Glass Mat⁴</i>		Feeding	0.05
Forming	0.01	<i>Manufacturing⁴</i>	
<i>Fiber Glass Residential^{3,4}</i>		Bulk	0.07
Removal	0.40	Commercial & Industrial	0.07
Compressed Air Cleanup	0.56	Ceiling Panels & Tiles	0.20
<i>Filtration Products⁴</i>		Filtration	0.21
Fabrication	0.10	Spray-On Fire Proofing	0.20
<i>Duct Board^{1,3,4}</i>		High-Density Board	0.04
Fabrication	0.04	Pipe Insulation	0.03
Installation	0.02	<i>Rock and Slag Residential³</i>	
Handling	0.028	Removal	0.13
Cutting/Sawing with Power Tools	0.038	<i>Miscellaneous^{1,4}</i>	
<i>Duct Liner^{1,4}</i>		Fabrication with Hand-Held Power Cutting Tools	0.15
Fabrication	0.06		
Installation	0.09		
<i>Duct Wrap¹</i>			
Installation	0.35		
<i>Industrial Board/Blanket^{3,4}</i>			
Fabrication/Installation	0.08		
Removal	0.44		
Cutting/Sawing with Power Tools	0.05		
<i>Pipe Insulation^{3,4}</i>			
Installation	0.04		
Removal	0.04		
<i>Metal Building Insulation</i>			
Installation	0.10		
<i>Miscellaneous^{1,4}</i>			
Fabrication with Hand- Held Power Cutting Tools	0.15		
Manufacturing	0.05		

1. Johns Hopkins University Study
 2. Rock and Slag Wool Installers Study
 3. Fluor Daniel Study of Worker Exposures During Removal of SVF
 4. NAIMA Member Company Studies

* Sample Duration of 240 Minutes or Longer.
 ** As Evaluated by the NIOSH 7400 "B" Sampling and Analytical Methodology.

Source: Data provided to NAIMA by Arizona State University following a thorough review and analysis by A.S.U.

tors can rely on the information contained in the NAIMA database to quickly and easily determine their potential exposure level and need for respiratory protection. In endorsing the HSPP, OSHA fully supports the ability of contractors to rely on the NAIMA database as the means for determining exposure levels.

According to the provisions in the HSPP, any exposure to airborne respirable fibers in excess of the 1 f/cc permissible exposure limit averaged over an 8-hour workday will need controls to reduce exposures below the PEL. Engineering controls are preferred, but if these are not feasible or practical, then properly used respiratory protection can be an effective control.

In addition, due to previous exposure measurement results and the varying concentrations expected, respiratory protection must be worn for certain activities regardless of the task length. Appropriate respiratory protection, as referenced in the HSPP, is a NIOSH certified dust respirator (certified N95 or greater). Work tasks where respiratory protection must be worn under the HSPP include blowing loose-fill mineral wool insulation into attics or walls; dumping or pouring of unbonded, bulk mineral fibers and specialty filtration fiber products; and removal of SVF products during significant repair or demolition.

Using the NAIMA Database

The charts contained herein summarize the existing NAIMA exposure data collected for fiber glass, rock wool and slag wool insulation. The measurements in each chart are categorized by product and work task based on an 8 hour (TWA) workday.

Upon receiving a request for data from the HSPP Fiber Exposure Database, NAIMA will respond by providing the Fiber Exposure Database literature piece. Because this literature will contain the average exposures for the most common tasks and provide an explanation on the background and function of the Database, this literature will automatically be provided so that recipients understand the nature of the Database. If the request seeks exposure data points for tasks not identified within the literature, NAIMA will consult a designated member of the Auditing Team to ascertain whether the requested exposure data exists. If the data does exist within the Exposure Database, the Auditing Team member will provide the information to NAIMA with the same parameters and details as those data points possess in the literature to fulfill the requirement. If the data point does not exist, the Auditing Team will discuss whether to recommend to the HSPP Committee that action should be taken to acquire exposure data.

Table 2 – Exposure Data

Product Description	Time-Weighted Average (TWA)[*] Exposure Levels (f/cc)^{**}	Product Description	Time-Weighted Average (TWA)[*] Exposure Levels (f/cc)^{**}
Fiber Glass	Mean (Average)	Rock and Slag Wool	Mean (Average)
<i>Blowing Wool With Binder</i> ^{1,4,6}		<i>Blowing Wool With Binder</i> ^{1,3}	
Installation	0.30	Installation	0.34
<i>Blowing Wool - Without Binder</i> ^{1,4,5,6}		<i>Cavity Fill Insulation</i> ^{1,4}	
Installation	0.95	Installation	0.11
<i>Cavity Fill Insulation</i> ⁴			
Installation	0.16		

1. Johns Hopkins University Study
2. Rock and Slag Wool Installers Study
3. Fluor Daniel Study of Worker Exposures During Removal of SVF
4. NAIMA Member Company Studies
5. Insulation Contractors Association of America Installers Study
6. NAIMA/Clayton Study

* Sample Duration of 240 Minutes or Longer.
** As Evaluated by the NIOSH 7400 "B" Sampling and Analytical Methodology.

Source: Data provided to NAIMA by Arizona State University following a thorough review and analysis by A.S.U.