

## PRODUCT DATA SHEET

### MLV50®

#### Description:

MLV50® is a flexible barium loaded vinyl barrier suitable for a wide range of industrial and commercial noise control applications. It is ideal for use with ducts, pipes and steel framing.

Mass Loaded Vinyl (MLV) can be used as a barrier in walls, floors and ceilings to significantly increase the mass of these surfaces and thus reduce noise.

Independent laboratory testing concluded that MLV50® exhibits good impact sound insulation and transmission loss performance across a broad range of frequencies. It can be used as a sole sound absorption layer or as part of a multilayer composite with other materials. It has naturally good resistance to mineral oils and is recyclable.

#### Key features & benefits:

- **UK designed and manufactured** - MLV50® products are manufactured exclusively in UK factories. Products are produced in sheet and roll form.
- **Free from SVHC** - MLV50® products are free from substances of very high concern (SVHC) like lead, halogens and unrefined aromatic oils.
- **Tear strength** - Some manufacturing processes which only use calendaring or casting processes can cause MLV materials to tear more easily. MLV50® is manufactured by an extrusion process which gives this MLV high mechanical strength which makes it easy to handle and install. MLV50® is a robust product which means during installation it can support its own weight making it ideal for mechanical fixing without tearing.
- **Flexibility** - MLV50® is highly flexible which allows easy installation round corners, pipework, square ducting and steel framework without cracking and tearing. Good lay flat (high memory form) even at cold temperatures (for example, after warehouse storage).
- **Consistency and stability** - high speed mixing process coupled with super cooling means MLV50® products are physically stable and robust. MLV50® can be warehoused in cold storage without risk of cracking and product deterioration. Under normal environmental conditions of use the material does not chemically degrade or change its physical properties over time.
- **Surface finish** - MLV50® has specifically been designed to provide better slip resistance and help safer installation on floors. It is manufactured with either one side embossed and one side smooth or two sides embossed. The embossed surface increases the surface area to aid adhesion to other laminates.
- **Clean and oil free surface** - Our extrusion process means MLV50® has no oily or greasy residues (like bitumen based or viscous/sticky products) on the surfaces and therefore does not stain and prevents the product from sticking together during storage and installation in warmer temperatures. It also means MLV50® does not require interleaves so reduces waste disposal costs.

## Typical Physical Properties: MLV50®

| Attribute and test method   | Specification<br><i>(based on typical product performance)</i> |
|---|--|
| Widths available  | < 2000 mm  |
| Product format  | Sheet, die cut part or rolls                                   |
| Colour  | Dark Grey / Black  |
| Nominal Weight<br><i>Standard Manufacturing tolerances are +/- 10%</i>  | 5.0 kg/m <sup>2</sup>  |
| Nominal Thickness<br><i>Calculated - Standard Manufacturing tolerances are +/- 10% products are normally made to a weight bias.</i> | 2.00mm   |
| Acoustic rating BS EN ISO 717-1 R <sub>w</sub> (C:Ctr) (-1;-3)  | 27 dB  |
| Hardness<br><i>Durometer Shore A, 1 sec dwell +/- 10%</i>   | 85   |
| Tensile Strength<br><i>JISK 6251 - Standard Manufacturing tolerances are +/- 10%</i>  | 4.0 MPa  |
| Elongation at break<br><i>JISK 6251 - Standard Manufacturing tolerances are +/- 10%</i>   | 130%   |
| Dimensional Stability<br><i>4 hr @ 100°C</i>  | MD -2%<br>XMD +1%  |
| Bend Test 10mm Mandrel<br>Bend Test Fold Flat (180 degrees)   | No Cracking<br>No Cracking                                     |
| Tear test<br><i>D41 1126D</i>   | 76 N/cm  |
| Flexibility<br><i>D45 1301D - 5 minutes</i>   | MD 40mm  |
| Flammability<br><i>FMVSS 302</i>  | Self-extinguishing   |
| Static Service Temperature  | - 30°C up to 100°C   |

### Sustainability and recycling:

Our Suppliers use sustainable recycled raw materials to manufacture our MLV50® products. Our MLV50® product is 100% recyclable at end of life.

We recycle 100% of our production waste and often recycle post-consumer waste from our customers.



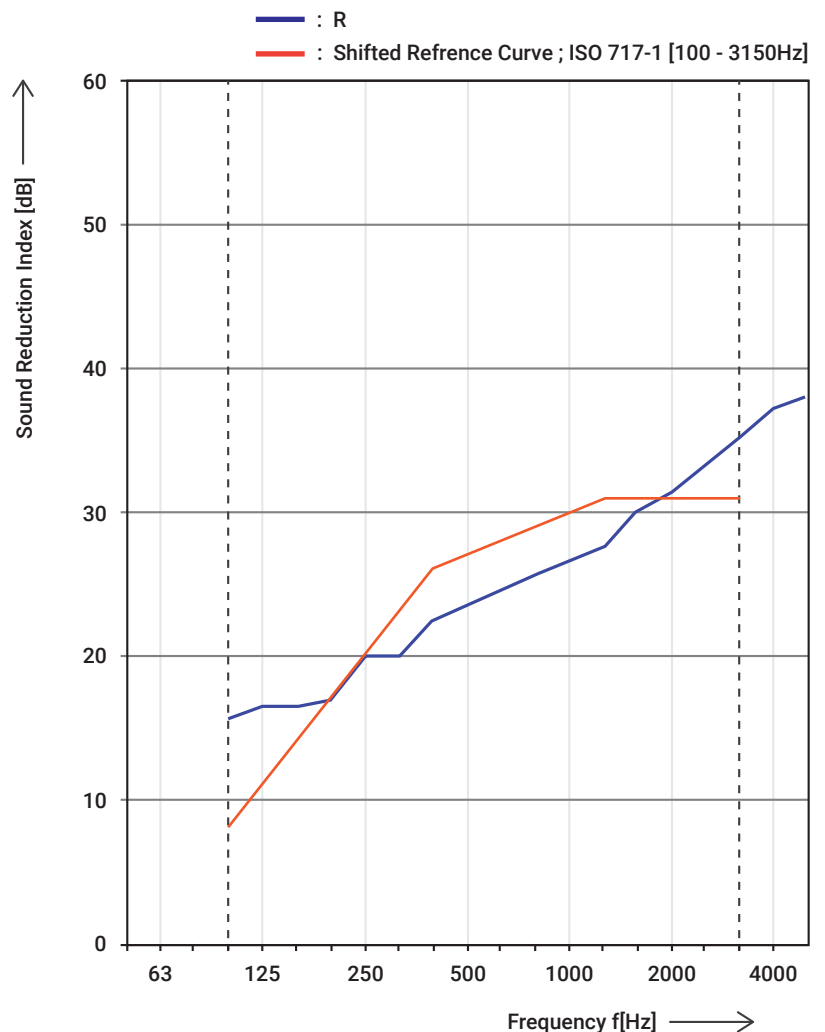
## ACOUSTIC TESTING

According to BS EN ISO 10140-2: 2010, Sound Reduction Index  
Laboratory Measurement of sound insulation of building elements  
University of Salford Acoustic Test Lab.

### MLV50®

|   |                           |   |
|---|---------------------------|---|
| Rating according to BS EN ISO 717-1   |                           | $C_{50-3150} = \text{--} \text{ dB}; C_{50-5000} = \text{--} \text{ dB}; C_{100-5000} = 0 \text{ dB}$           |
| $R_w$   | (C;Ctr) = 27 (-1 ; -3) dB | $C_{tr,50-3150} = \text{--} \text{ dB}; C_{tr,50-5000} = \text{--} \text{ dB}; C_{tr,100-5000} = -3 \text{ dB}$ |
| Evaluation based on laboratory measurement results obtained in one-third-octave bands by an engineering method. |                           |   |

| Frequency<br>f<br>[Hz] | R<br>$\frac{1}{3}$ octave<br>[dB] |
|------------------------|-----------------------------------|
| 50                     | --                                |
| 63                     | --                                |
| 80                     | --                                |
| 100                    | 15.7                              |
| 125                    | 16.6                              |
| 160                    | 16.6                              |
| 200                    | 16.9                              |
| 250                    | 20.2                              |
| 315                    | 20.1                              |
| 400                    | 22.5                              |
| 500                    | 23.4                              |
| 630                    | 24.5                              |
| 800                    | 25.7                              |
| 1000                   | 26.6                              |
| 1250                   | 27.9                              |
| 1600                   | 30.0                              |
| 2000                   | 31.4                              |
| 2500                   | 33.3                              |
| 3150                   | 35.2                              |
| 4000                   | 37.2                              |
| 5000                   | 38.2                              |



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Issue Date: April 2018

## MLV50<sup>®</sup> MASS LOADED VINYL High Performing Acoustic Membrane

- Increases Mass to light weight partition stud walls
- Easily applied for soundproofing walls, floors and ceiling
- Recommended when installing recording studios, cinema rooms or any rehearsal space
- Can be used to wrap around service pipes and to minimise noise from ducting
- Can also be used below metal decks or roofs to dampen sound



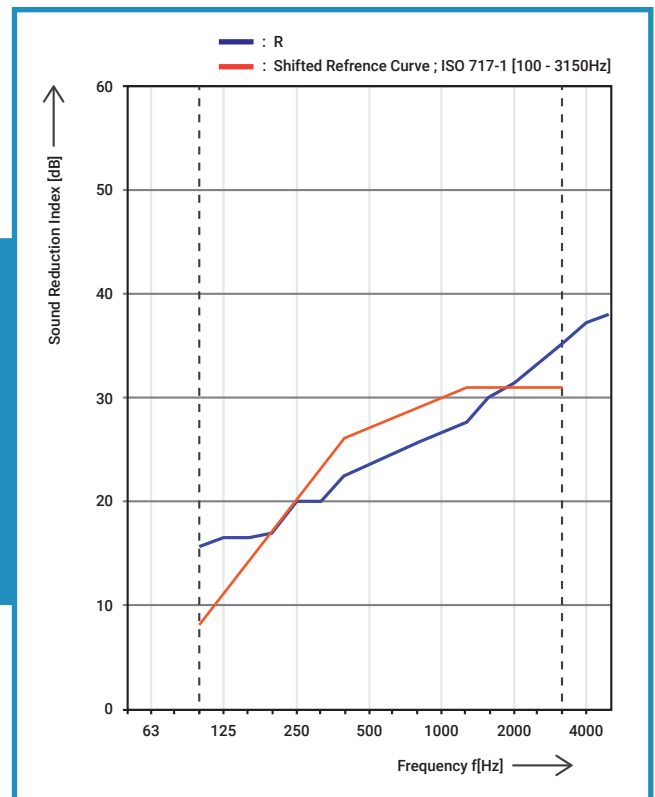
### Product Specs

Rolls Size:  
6m x 3m Rolls

MLV50<sup>®</sup> ( Mass Loaded Vinyl) is a mineral loaded heavy layer nominally 3mm thick with a mass of 5kg/m<sup>2</sup>. It is equal to lead of the same mass in effectiveness and acts as a thin de-coupling sound barrier in stud walls, ceilings and timber floors. Biggest sound insulation improvements can be achieved when it is used as one layer between two sheets of plasterboard.

### BENEFITS:

- Easy to cut and install
- Superior Acoustic performance (performing better than other similar products)
- Recyclable
- Effective as a decoupling barrier between plasterboard's
- Mineral loaded acoustic mat
- Flammability- Self Extinguishing
- Supplied in Rolls or in single sheet form



Weighted Sound Reduction Index - 27db

**Acoustic Performance:**  
Rw(C,Ctr) - 27db

## PRODUCT DATA SHEET

### MLV100®

#### Description:

MLV100® is a flexible barium loaded vinyl barrier suitable for a wide range of industrial and commercial noise control applications. It is ideal for use with ducts, pipes and steel framing.

Mass Loaded Vinyl (MLV) can be used as a barrier in walls, floors and ceilings to significantly increase the mass of these surfaces and thus reduce noise.

Independent laboratory testing concluded that MLV100® exhibits good impact sound insulation and transmission loss performance across a broad range of frequencies. It can be used as a sole sound absorption layer or as part of a multilayer composite with other materials. It has naturally good resistance to mineral oils and is recyclable.

#### Key features & benefits:

- **UK designed and manufactured** - MLV100® products are manufactured exclusively in UK Factories. Products are produced in sheet and roll form.
- **Free from SVHC** - MLV100® products are free from substances of very high concern (SVHC) like lead, halogens and unrefined aromatic oils.
- **Tear strength** - Some manufacturing processes which only use calendaring or casting processes can cause MLV materials to tear more easily. MLV100® is manufactured by an extrusion process which gives this MLV high mechanical strength which makes it easy to handle and install. MLV100® is a robust product which means during installation it can support its own weight making it ideal for mechanical fixing without tearing.
- **Flexibility** - MLV100® is highly flexible which allows easy installation round corners, pipework, square ducting and steel framework without cracking and tearing. Good lay flat (high memory form) even at cold temperatures (for example, after warehouse storage).
- **Consistency and stability** - high speed mixing process coupled with super cooling means MLV100® products are physically stable and robust. MLV100® can be warehoused in cold storage without risk of cracking and product deterioration. Under normal environmental conditions of use the material does not chemically degrade or change its physical properties over time.
- **Surface finish** - MLV100® has specifically been designed to provide better slip resistance and help safer installation on floors. It is manufactured with either one side embossed and one side smooth or two sides embossed. The embossed surface increases the surface area to aid adhesion to other laminates.
- **Clean and oil free surface** - Our extrusion process means MLV100® has no oily or greasy residues (like bitumen based or viscous/sticky products) on the surfaces and therefore does not stain and prevents the product from sticking together during storage and installation in warmer temperatures. It also means MLV100® does not require interleaves so reduces waste disposal costs.

## Typical Physical Properties: MLV100®

| Attribute and test method   | Specification<br><i>(based on typical product performance)</i> |
|---|--|
| Widths available  | < 2000 mm  |
| Product format  | Sheet, die cut part or rolls                                   |
| Colour  | Dark Grey / Black  |
| Nominal Weight<br><i>Standard Manufacturing tolerances are +/- 10%</i>  | 10.0 kg/m <sup>2</sup>   |
| Nominal Thickness<br><i>Calculated - Standard Manufacturing tolerances are +/- 10% products are normally made to a weight bias.</i> | 4.00mm   |
| Acoustic rating BS EN ISO 717-1 R <sub>w</sub> (C:Ctr) (-1;-3)  | 31 dB  |
| Hardness<br><i>Durometer Shore A, 1 sec dwell +/- 10%</i>   | 85   |
| Tensile Strength<br><i>JISK 6251 - Standard Manufacturing tolerances are +/- 10%</i>  | 3.2 MPa  |
| Elongation at break<br><i>JISK 6251 - Standard Manufacturing tolerances are +/- 10%</i>   | 120%   |
| Dimensional Stability<br><i>4 hr @ 100°C</i>  | MD -2%<br>XMD +1%  |
| Bend Test 10mm Mandrel<br>Bend Test Fold Flat (180 degrees)   | No Cracking<br>No Cracking                                     |
| Tear test<br><i>D41 1126D</i>   | 100 N/cm   |
| Flexibility<br><i>D45 1301D - 5 minutes</i>   | MD 10mm  |
| Flammability<br><i>FMVSS 302</i>  | Self-extinguishing   |
| Static Service Temperature  | - 30°C up to 100°C   |

### Sustainability and recycling:

Our Suppliers use sustainable recycled raw materials to manufacture our MLV100® products. Our MLV100® product is 100% recyclable at end of life.

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## ACOUSTIC TESTING

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Laboratory Measurement of sound insulation of building elements  
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### MLV100®

Rating according to BS EN ISO 717-1

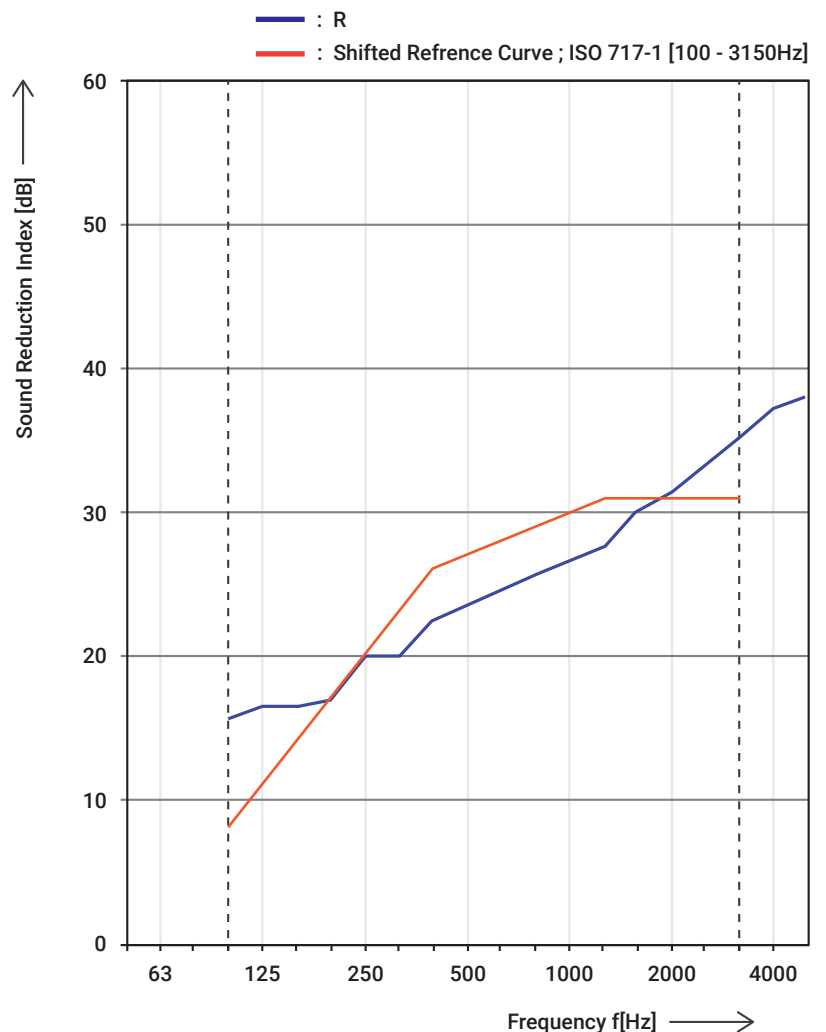
$R_w$  (C;Ctr) = 31 (-1 ; -3) dB

$C_{50-3150} = \text{--} \text{ dB}$ ;  $C_{50-5000} = \text{--} \text{ dB}$ ;  $C_{100-5000} = 0 \text{ dB}$

$C_{tr,50-3150} = \text{--} \text{ dB}$ ;  $C_{tr,50-5000} = \text{--} \text{ dB}$ ;  $C_{tr,100-5000} = -3 \text{ dB}$

Evaluation based on laboratory measurement results obtained in one-third-octave bands by an engineering method.

| Frequency<br>f<br>[Hz] | R<br>$\frac{1}{3}$ octave<br>[dB] |
|------------------------|-----------------------------------|
| 50                     | --                                |
| 63                     | --                                |
| 80                     | --                                |
| 100                    | 19.8                              |
| 125                    | 22.2                              |
| 160                    | 21.4                              |
| 200                    | 21.9                              |
| 250                    | 25.3                              |
| 315                    | 25.2                              |
| 400                    | 27.5                              |
| 500                    | 28.2                              |
| 630                    | 28.8                              |
| 800                    | 29.4                              |
| 1000                   | 29.3                              |
| 1250                   | 30.2                              |
| 1600                   | 33.1                              |
| 2000                   | 34.5                              |
| 2500                   | 36.5                              |
| 3150                   | 38.2                              |
| 4000                   | 40.1                              |
| 5000                   | 40.6                              |



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Issue Date: April 2018

## MLV100<sup>®</sup> MASS LOADED VINYL High Performing Acoustic Membrane

- Increases Mass to light weight partition stud walls
- Easily applied for soundproofing walls, floors and ceiling
- Recommended when installing recording studios, cinema rooms or any rehearsal space
- Can be used to wrap around service pipes and to minimise noise from ducting
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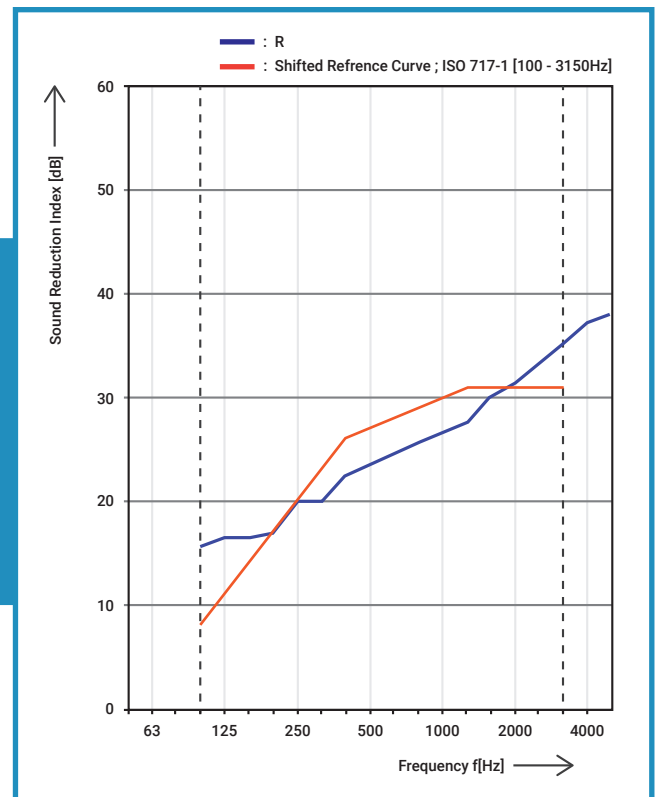
### Product Specs

Rolls Size:  
4m x 3m

MLV100<sup>®</sup> (Mass Loaded Vinyl) is a mineral loaded heavy layer nominally 5mm thick with a mass of 10kg/m<sup>2</sup>. It is equal to lead of the same mass in effectiveness and acts as a thin de-coupling sound barrier in stud walls, ceilings and timber floors. Biggest sound insulation improvements can be achieved when it is used as one layer between two sheets of plasterboard.

### BENEFITS:

- Easy to cut and install
- Superior Acoustic performance (performing better than other similar products)
- Recyclable
- Effective as a decoupling barrier between plasterboard's
- Mineral loaded acoustic mat
- Flammability- Self Extinguishing
- Supplied in Rolls or in single sheet form



Weighted Sound Reduction Index - 32db

**Acoustic Performance:**  
Rw(C,Ctr) - 32db



## MASS LOADED VINYL

### SRU INSULATION Instalation Manual

When building sound isolated walls, floors and ceilings, we want to introduce significant non-resonant mass. MLV is an excellent source for this non-resonant mass. Other building materials such as drywall, plywood, and concrete are all very resonant, creating problems during construction. This makes MLV unique and a very useful source of the desired non-resonant mass.

You'll find MLV very useful for adding thin mass to walls, floors and ceilings. This mass directly lowers sound transmission.

Our MLV( Mass Loaded Vinyl) material comes in both MLV100 ( 4m x 1.22m ) & MLV50 ( 6m x 1.22m) MLV50 is generally used on ceilings to increase mass , while MLV100 is slightly more commonly used on walls and floors to also increase mass to the area.

### ALL MLV IS NOT CREATED EQUAL

Many low-cost MLV products use cheaper materials to manufacture. It's important to note that we only use vinyl that contains polymeric plasticisers for strength and stability rather than the cheaper monomeric. We also only use extruded MLV rather than cast, as cast MLV is quite weak. Make sure you're getting the quality you're paying for.



**WARRANTY:** Because of the many installation variables beyond our control, we shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. SRU INSULATION liability is expressly limited to replacement of defective goods. Any claims shall be deemed waived unless made in writing to us within thirty (30) days from the date it was or reasonably should have been discovered.

**BUILDING CODE:** The SRU INSULATION Company presents these construction concepts with the understanding that local Building Codes vary. It is the responsibility of the installer to ensure that these concepts meet local Building Code. The Soundproofing Company is not liable for mis-installation or non-compliance with local code.

## Required Material

- Tape Measure
- Utility Knife
- T-Square or Straight Edge
- Pneumatic Cap Stapler, Hammer or Screw Driver
- Roofing Nails, Cap Staples, or Screws with Caps
- Vinyl or Foil Seam Tape
- Acoustical Sealant

## Optional Material

Outlet Putty Pads

## SPECIFICATIONS

|                     |  |
|---------------------|--|
| Material:           | Extruded Mass Loaded Vinyl with Calcium Silicate                                 |
| Width:              | 48" x 25' (1 lb.)<br>54" x 30' (1 lb.)<br>48" x 18' (2 lb.)<br>54" x 15' (2 lb.) |
| Color:              | Black  |
| Surface:            | Smooth finish  |
| Density and Weight: | 1.0 lb. per sq.ft.<br>2.0 lb. per sq.ft.   |
| Thickness:          | 1/8"(1 lb.) & 1/4"(2 lb.)  |
| Tensile Strength:   | 500 psi  |
| Die "C" Tear:       | 100 lb.  |
| Shore:              | 85 +/-5  |
| Elongation:         | 90%  |
| Burn Test:          | Meets MVSS302<br>ULP4 - HF-1   |
| Service Temp:       | -20F - 180F  |

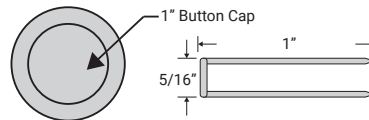
## Fasteners - Support the Weight

Our MLV is an extruded, not cast product, consequently it is much more resistant to tears. Having said that, MLV can still easily tear under its own weight. Care needs to be taken during installation.

It's important to use the proper fastener. A wide head fastener is needed to spread out the weight; such as Cap Staples, Roofing Nails or Screws with Plastic Washers.

Do not expect one or two fasteners to support the significant weight of MLV. Secure the beginning of the roll with several fasteners, before allowing to hang.

All fasteners must be anchored flush into the structures framing. Do not rely on drywall alone to support the weight of the MLV.



Pneumatic Cap Stapler (**Recommended**)  
1" Long 5/16" Wide Staple with 1" Cap



1 1/4" Roofing Nail



3/4" Wafer Head Screw with Plastic Washer

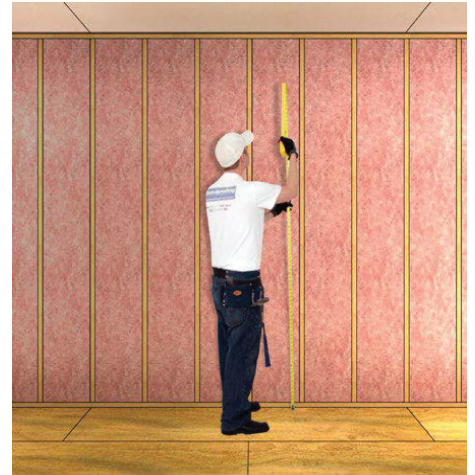
## ★ WHERE TO APPLY?

Mass Loaded Vinyl can be installed over existing surfaces or directly to wood and metal framing. MLV is equally effective whether placed loosely or taught on framing. Additionally, MLV is equally effective attached to framing or constrained between layers of drywall, plywood, plaster, etc. The material functions so well because of its mass and independent lab tests clearly show there is no advantage installing limply or rigidly. Install in whatever manner is most convenient. If installing on bare wall studs or ceiling joists, it is generally easier to install parallel to the framing. So for example MLV would be installed vertically on wall studs. This allows you to press on the seams when sealing, because there's a stud or joist behind the seam.

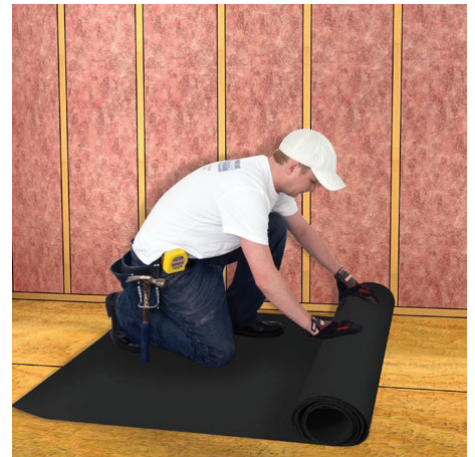
If installing on existing drywall or plaster & lathe, find the studs or joists and mark them with a chalk line. MLV can just as easily be installed horizontally or vertically in this case, as the existing wall will support the seams and you will have a very flat application.

## Preparation: Measuring and Cutting Mass Loaded Vinyl

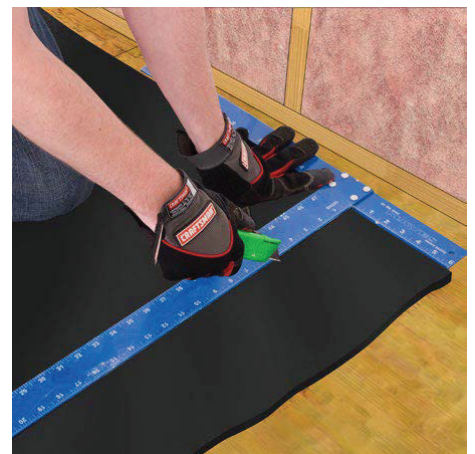
1 Measure the distance between the floor and the ceiling. Subtract 1/8" - 1/4" from the measured length.



2 Place the roll of Mass Loaded Vinyl on the floor, then cut to length.



3 Use a T-Square or Straight Edge to cut a square edge. Use a Utility Knife and cut the MLV to length.



## Installing: Mass Loaded Vinyl (MLV)

- 3 With the assistance of another person, position the first length of MLV in the top corner of wall. Ensure that the Mass Loaded Vinyl is straight along the ceiling so as to evenly drape the wall. Maintain an even gap along both the floor and ceiling.

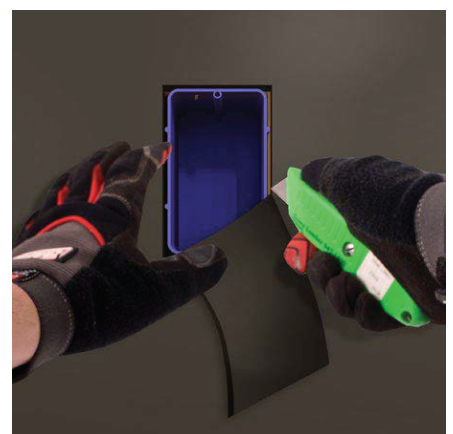
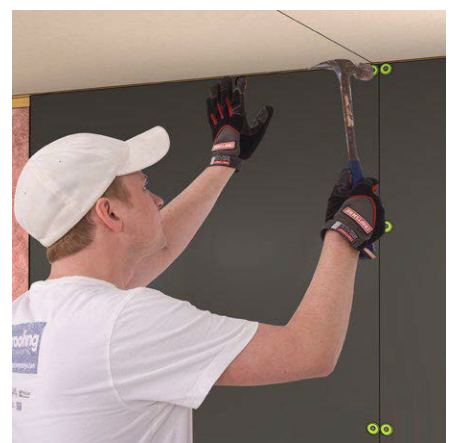
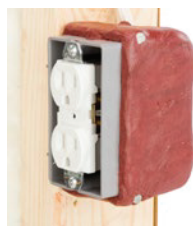
Use a Pneumatic Cap Stapler for quicker installation. Fasten to every 8" along the top plate and along the length of the studs.

- 4 For 16" On Center (O.C.) framing, hammer the nail and washer through the MLV every 24" o.c. along the top plate length of each stud. For 24" O.C. framing hammer an additional nail into the top plate and bottom plate in between each stud.

- 5 Be careful not to cover electrical outlets boxes. It is best to expose the outlets boxes as you install each length of MLV. Find the electrical box in your wall and gently press the MLV against the box. Using a Razor Blade Knife and carefully cut the opening along the edges of the box. Keep this hole tight as possible to the electrical box so that you maintain a good seal.

### Using Putty Pads

For superior sound isolation results, use outlet Putty Pads over electrical boxes before installing MLV.



### ★ Steel Stud Installation

Use 3/4" Wafer Head Tek Self-Tapping screws with washers.

2-4 Rosehill Court, St Helier Avenue,  
Morden, SM4 6JS

Sale & Support: (795) 194 4419

Email: [sales@sruinsulation.co.uk](mailto:sales@sruinsulation.co.uk)

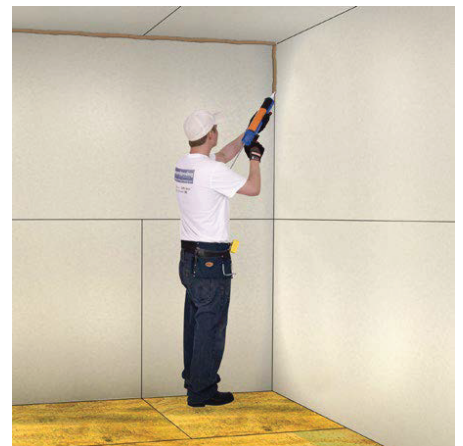
Web: [www.sruinsulation.co.uk](http://www.sruinsulation.co.uk)

## Installing: Mass Loaded Vinyl (MLV)

**6** Repeat steps 1- 6 until your entire wall or ceiling is covered in MLV.  
Where MLV seams fall on a stud, butt pieces against one another and tape with Vinyl or Foil Tape.  
Where MLV seams falls between studs, overlap pieces by 2". See Dealing with Seams page for detailed instruction.

**7** Hang your drywall over the MLV, vertically or horizontally. Caulk the perimeter seams with Acoustical Sealant. Proper sealing is necessary to achieve quality sound isolation results.

**8** Mud your drywall seams and finish you wall or ceiling to your desired results.

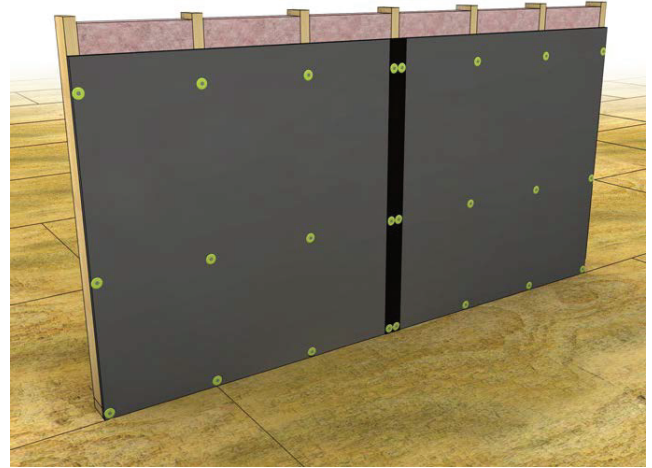


## Details: Dealing with Seams

### Using Putty Pads

Seams on a stud makes it easier to apply Vinyl or Foil Tape. This type of installation will require more precision when installing MLV.

To create a seam on a stud, butt two pieces of MLV against one another. Do not allow the strips to overlay one another. Fasten each length of MLV separately into the framing. Cover each seam with a strip of 2" Vinyl or Foil Tape.

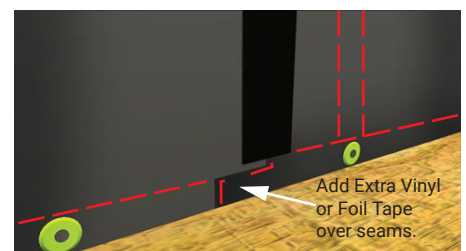
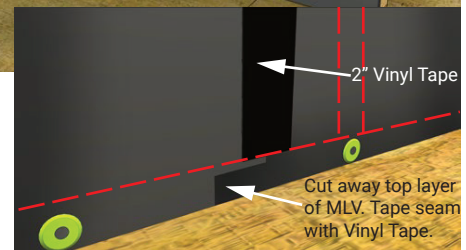
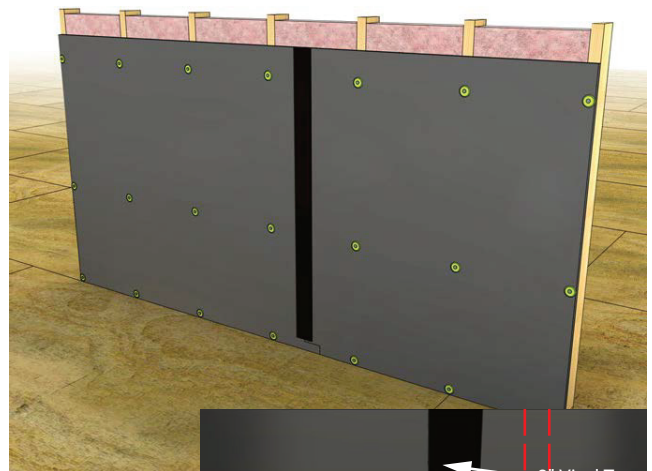


### Seam Between the Studs

It is common for a Mass Loaded Vinyl seam to occur between studs, as the width of the MLV might not necessarily fit your framing.

To create a seam between studs, overlap one length of MLV approximately 2" over the next length of MLV. Cut away the layer of MLV where it overlays at the top and bottom plates of the frame. Seal the seam with a strip of 2" wide vinyl tape.

It is important to not have two layers of MLV overlapping on the framing. This will cause problems when installing drywall flush to the wall.





## COMPLETED WALL ASSEMBLY WITH MLV