

UHMW Lining Installation Instructions

Thickness & Grade of UHMW to be Used:

For fine grain like materials that are not particularly abrasive Sheet of up to 1/2" is more than sufficient for lining. Most times Polystone Reprocessed or Virgin UHMW is used. For materials that are coarse and corrosive, which put greater wear on the liner we recommend sheet of at least 1/2" or thicker. Many liners for coke and heavy aggregates up to 1-1/2" sheet are used. With heavy abrasive materials we recommend Röchling's Polystone X-Linked & MPG.

Safeguards to Observe when doing a UHMW Lining:

There are a number of different types of installations that can be used for UHMW. When choosing which one you want to use there are a number of things you need to safeguard when doing a lining with UHMW. A number of these suggestions listed below are due to the fact that UHMW is a thermoplastic and expands and contracts with temperature change. Please read carefully the following safeguard and make sure to put them into your installation. These safe guards are:

- Always make sure your leading{top}edge is covered with a steel cover strip.
- Allow space for your UHMW liner to expand and contract. Allow 3/16" to 1/4" between sheets that are side by side. This is done by using H-Profile, T-Profile, or by using a lot of silicone caulk in spaces and over fasteners.
- Use a fastening system that allows for expansion and contraction of the liner with temperature change.
- Sheet to Sheet in direction of flow end to end we recommend an overlap system of sheets of up to 4", a lap joint sheet to sheet or a 45° bevel system sheet to sheet. {Figure 2}
- We highly recommend that the lining be installed in the warmest part of the year. Expansion will give you more problems than contraction in installing UHMW liner. Liners installed between 65°F and 80°F have far fewer failures than liners installed in the colder conditions.

Recommended Fastening Systems:

- Recommended are the Weld Washer System{See Figure 3}, This is available from Röchling.
- The TRW Nelson Stud System{See Figure 4}, This is available from your local TRW Nelson Rep.
- Combination Weld Washer with Hilti Impact fastener. This is available from your Hilti Rep.
- Many liners are installed with large head Elevator Bolts. These bolts are very successfully used as long as you drill the through hole 1/6" of and inch larger than the fastener. This will allow the sheet to move around the fastener.

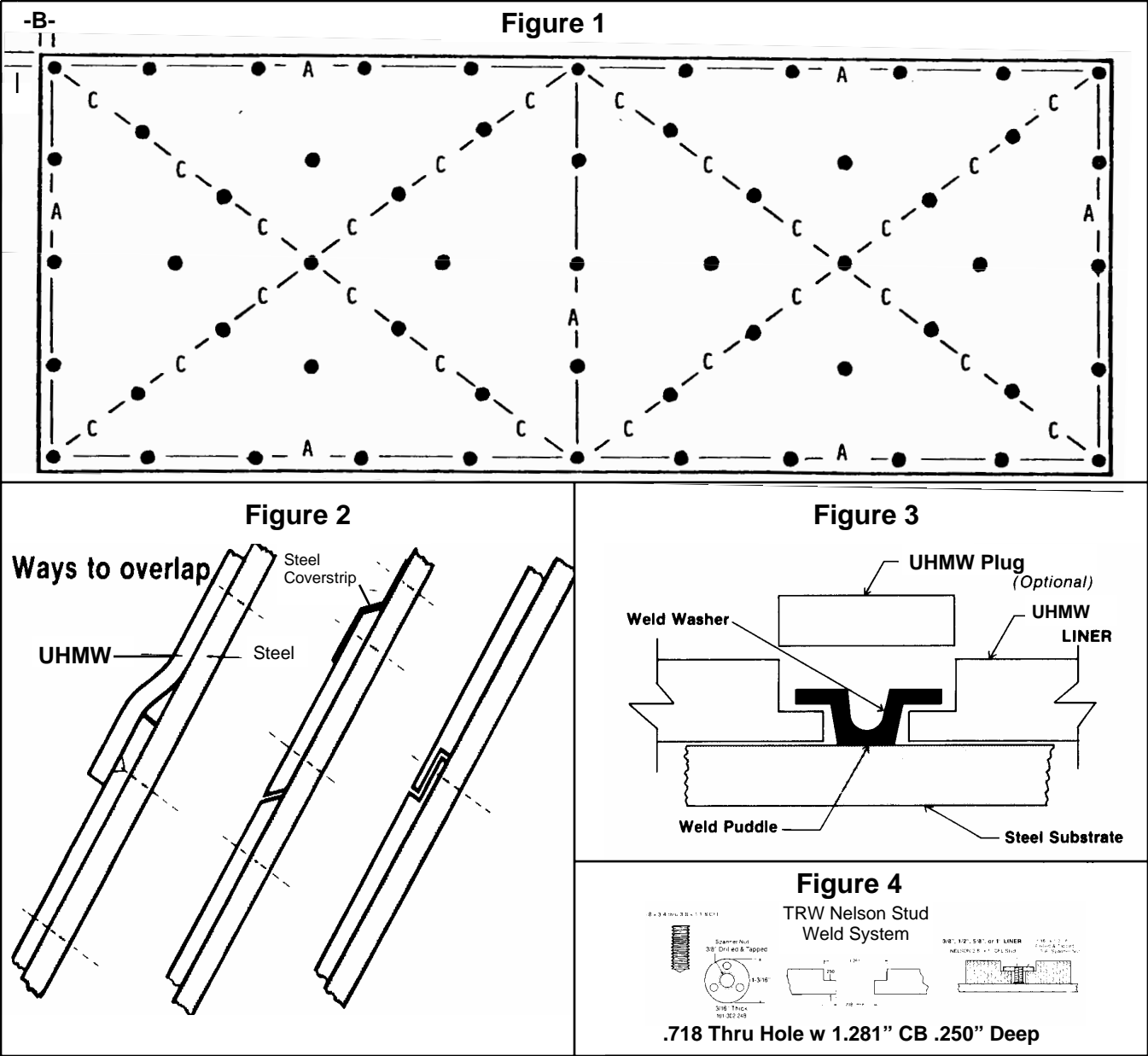
Always make sure that with all fastening systems that you either silicone caulk over the fastener holes or us a plug system. Please note when using a plug system, Most plugs will not stay in without a silicone caulk and plug, because of the high impact that occurs on most Hoppers and Bins, for this reason many customer will only use a good silicone caulk over the fasteners.

Note: When using any type of welding fastener it is essential to sandblast the hopper or bin that you wish to attach the lining to. Without this you will get a poor weld and your liner may fall out prematurely. Often times it is desirable to take a 1" End Mill and scrap the surface throughout the liner hole to assure that you will have bare metal contact for your welding operation.

Spacing of Fasteners:

It is recommended that the spacing of fasteners be based on the thickness of sheet. Refer to Figure 1 and this chart for recommended fastening procedures and fastener spacing.

Suggested Spacing of Fasteners on Centers			
Sheet Thickness	A	B	C
1/4"	6" - 8"	1" - 2"	8" - 10"
3/8"	8" - 10"	1" - 2"	10" - 12"
1/2" - 3/4"	12" - 15"	1" - 2"	12" - 15"
1" & Over	15"	1" - 2"	15" - 20"



Procedures to Starting a Lining Job

- Determine the Thickness of and Grade of UHMW Sheet to be used for the job.
- Determine the Fastening Method Best For your Application. Remember Weld Washers are Available from Röchling Engineered Plastics, Contact TRW Nelson for Stud welding or Hilti for Impact nails.
- Thoroughly clean the hopper or bin to be lined. Many times Sand Blasting is required.
- Layout and cut your sheets. Predrill your sheet for Weld Washers and Nelson Stud Welding Systems. Where fastening though your substrate drill in position.
- Make sure to use a steel cover strip on the leading edge. This will prevent anything from getting behind your liner and pulling it out prematurely.
- Fill in all cracks and seams with a Silicone Caulk. Also fill all fastener holes with Silicon Caulk and plugs or just the caulk.

You should now have a successful installation of your UHMW Liner, that should last for years to come !