

**WHAT PROCESS
PACKS THE BEST
PUNCH** WHEN IT
COMES TO
**ACHIEVING
MEMORY-FREE
STEEL?**



What leveling process is right for you? (A toe-to-toe comparison.)



Stretcher Leveling

- ★ Hydraulics are used to physically stretch the material in the rolling direction, removing waves and buckles.
- ★ As a result, the steel's entire cross section is stretched, eliminating the memory. The stretcher leveler has little effect on the steel's properties.
- ★ The stretching exerts enough force to overcome the yield of the material across the entire width and through the thickness.

Bottom line:

- Level, flat sheets
- Elimination of all internal memory and stress
- Steel with no memory processes with ease and increases productivity



Temper Rolling

- ★ Temper mills compress material under a high uniform force, in the longitudinal direction.
- ★ The material is elongated beyond the yield point overcoming the internal stress.
- ★ The uniform force Temper rolling applies cannot fully compensate for the incoming variation in internal grain structure/length.
- ★ Roller leveling is used in conjunction with Tempering and can induce some internal stress and resultant material memory may occur.

Bottom line:

- Flat sheets with good surface
- Will not always eliminate all memory, edge wave or center buckle



And the winner is...

If your steel is destined to be laser cut, plasma cut, sheared, welded, etc...you will benefit most from the **stretcher leveling process**.

Only stretcher leveling can deliver memory free material that is flat and stays that way.

Stretcher leveling produces a completely stress free product that is superior to that of traditional temper pass or roller leveled material.



Do you have a memory problem?

With today's sophisticated laser, plasma and punching fabrication processes, even the slightest problems with flatness and internal stress can wreak havoc on a production line. As a result, the demand for flat, memory-free steel continues to increase.


To eliminate internal stress and permanently flatten steel it must be "stress equalized". This is especially important for heavier gauges and higher strength steels where roller leveling is not very effective.

The one-two punch: flatness and internal stress.

Flatness problems—waves, buckles, crossbows—are primarily caused by length differences in some portions of the strip compared to other parts. To eliminate this, the shorter fibers of the steel must be stretched until all internal portions of the steel are of equal length.

Similarly, trapped internal stress is created when portions of the steel are under tension while other portions are not.

Elongating the entire cross section—top to bottom and side to side—past its yield point, is required to permanently erase the material's previous memory and eliminate flatness and stress problems.



"I have no
recollection of...
anything."

Is stretcher leveling right for you?

Are you interested in:

- Having your production processes run more smoothly and efficiently than ever?
- Do you want to have fewer manufacturing headaches, reduce rejections and increase your profitability?



Contact Universal Steel to talk with a representative about their new Stretcher Leveler—AKA "The Eraser"—and learn how memory free sheets can provide a significant benefit to your business.



A discrete alternative.

If you're now using discrete plate, Universal can provide you with up to 3/4", memory free plate with far shorter lead times, lower costs and in smaller quantities.



**THE UNIVERSAL
STEEL COMPANY**

univsteel.com
1-800-669-2645 Ext. 230

The "Memory Eraser"



| Stretcher Leveler Capabilities | |
|-----------------------------------|---|
| Material | Hot Roll, Hot Roll Pickled & Oiled, Coated, Plate, Floor Plate |
| Grade | CS, DS, SS, HSLA |
| Thickness | 0.097" - 0.750" |
| Coil Weight | 70,000 lbs. max |
| Coil Width | 24" min. - 74" max. |
| Coil I.D. | 20" min. - 32" max. |
| Coil O.D. | 36" - 84" |
| Coil Length & Accuracy | 34" to 240" +/-0.062" 240" to 480" +/-0.125" 480" to 672" +/-0.250" |
| Lift Weight | 50,000 lbs. max. |

| Grade* | | | | | | | | |
|-----------|----|-----|------|------|------|-------|-------|-------|
| | CQ | A36 | 50XF | 70XF | 80XF | 100XF | 120XF | 140XF |
| Thickness | | | | | | | | |
| 0.097" | | | | | | | | |
| 0.127" | | | | | | | | |
| 0.179" | | | | | | | | |
| 0.240" | | | | | | | | |
| 0.312" | | | | | | | | |
| 0.375" | | | | | | | | |
| 0.500" | | | | | | | | |
| 0.562" | | | | | | | | |
| 0.625" | | | | | | | | |
| 0.687" | | | | | | | | |
| 0.750" | | | | | | | | |

*Green areas represent grade/thickness capabilities of the line

