THAYER
SOLIDS FLOW CONTROL®

Case Study:

Certified-for-Trade Conveyor Belt Scale Delivered Accuracy and Peace of Mind for U.S. Minerals

Background

U.S. Minerals, a leader in slag product for roofing and abrasives industries, was utilizing off-the-shelf conveyor belt equipment which didn't provide accurate measurement of the material they were conveying. Not using Certified-for-Trade equipment exposed them to the potential for inaccurate ticketing of materials and overcharging. An integrity issue and a legal risk.

To resolve the issue the company decided to make a significant investment in its facilities and equipment. They have multiple locations but they chose to make their investment in the Galveston, Texas plant and consolidate their Montana plant to increase business. They invested in the Texas location based on geography and the fact that the facility is located on a port and Montana is remote.

They knew they needed a conveyor belt scale but they were not aware of the difference between low cost belt scales and Certified-for-Trade belt scales. Thayer Scale to the rescue. Thayer Scale has a range of Certified-for-Trade conveying equipment and successfully made the case for upgrading to a Certified-for-Trade weighing system.

Certified-for-Trade Makes a Difference

The push to spend the money on an NTEP belt scale from Thayer Scale was that they have both a single-idler (low accuracy) scale and a rail scale at their LaCygne, Kansas location, but several rail cars continued to be overloaded. This was due to a combination of the low accuracy of the belt scale, along with the troublesome method of use for rail scale.

Over a year ago, U.S. Minerals purchased a 6-idler Certified-for-Trade conveyor belt scale and a single-idler belt scale used to convey and weigh copper slag and specialty abrasives. The 6-idler unit is used for rail car load out and the single-idler unit moves the material onto trucks which use an in-ground truck scale for weighing that serve as the ticketing mechanism. The Thayer Scale 6-idler conveyor belt scale has weighing accuracy of .1% range and the equipment they were using prior had 2-3% accuracy. The conveyor belt scale is used as needed and has a flow rate of 115 tons per hour.

If U.S. Minerals didn't have the option of purchasing the Thayer Scale Certified-for-Trade conveyor belt scale used for rail car load out they would have had to make a substantial investment in a rail scale which can run from $500,000 to over a million dollars. The Thayer Scale belt scale is integrated into a required conveyor making it highly efficient. U.S. Minerals expects to yield return on investment for the Certified-for-Trade belt scale in less than 6 months.

"We are so glad that we made the decision to invest in Thayer Scale equipment. Their expertise in weighing and conveying equipment established trust with us and allowed us to understand the importance and benefits of investing in Certified-for-Trade belt scales. We now have the confidence that we are charging customers based on an accurate piece of equipment," said Jeff Fink, VP of Operations at U.S. Minerals.

Thayer Scale, Hyer Industries Inc.
91 Schoosett Street, Pembroke, MA 02359
781-826-8101 • sales@thayerscale.com • www.thayerscale.com

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U.S. MINERALS

6-NAR-6. Specifications

- No. of weigh idlers – 6
- Belt widths inches – 24" – 72"
- Idler spacing inches – 36" – 60"
- Minimum load (lbs/ft) – 34
- Maximum load (lbs/idler) – 400
- Mass counterbalanced weigh bridge – Yes
- Belt speed (ft/min) – 10 – 1000
- Accuracy (%) design rate – 0.10%
- Accuracy (%) 3:1 range – 0.125%
- Load cell support – strain gauge

The Thayer Scale Certified-for-Trade conveyor belt scale selected was the 6NAR6-24-48 model designed to deliver exceptional stability and accuracy for use in applications requiring verifiable accuracy. They are recommended for applications requiring commercial certification for billing purposes. This decision solved U.S. Minerals' problem and provides accuracy of weighing and a safety-net knowing they now have the security of being protected legally by using Certified-for-Trade equipment to measure materials which ensures accuracy in billing.

"We were delighted to offer U.S. Minerals a solution. Once they understood the value of investing in a Certified-for-Trade conveyor belt scale their purchasing decision was simple. They recognized immediately that the cost was worthwhile and they not only improved the accuracy of their weighing but removed the previous integrity issue," said Bryan Martins, Regional Sales Manager South, Thayer Scale.

6NAR-6 NTEP Certified Conveyor Belt Scale

Thayer Scale's conveyor belt scales and conveyor weighing systems are designed for a range of accuracies: high accuracy loading and unloading systems, custody transfer and NTEP-approved versions (0.10% – 0.125%), inventory control and processing needs (0.25% – 0.5%), and various stone and aggregate applications (0.5% to 1%). Customers in fertilizer, mining, ore, copper, and coal industries utilize our conveyor belt scales in severe applications and in some of the harshest manufacturing environments. The Thayer Scale conveyor belt scales are Built to Survive and can last in service for decades even in the most extreme operating conditions.

The NAR belt scales have been proven in service demanding ±0.125% accuracy through independent certification. The weigh bridge features exclusive rocking flexure suspension in the approach-retreat configuration. Measurement sensitivity is high, deflection is low, and the load cell is isolated from the error-inducing effects of extraneous lateral forces, off-center loading, foundation distortion, inclination hold-back forces, and high sporadic shocks and overloads. Tare load is mass counterbalanced to create superior signal to noise ratio in weight sensing, orders of magnitude better than belt scale designs supporting full tare load on the load sensor.

U.S. Minerals
5712 Harborside Drive, Galveston, TX 77554
www.us-minerals.com