



Cramer Fabrics Success Story

The Challenge: Inspection of Manufacturing Area & Roof Joists

Cramer Fabrics manufactures a wide range of specialty textiles in their 60,000 square foot facility in Dover, New Hampshire. Manufacturing operations include modern warping, weaving, singeing, heat-setting and calendering equipment.

In the spring of 2014, Cramer Fabrics started work on a new machine installation project. One of the concerns they had with the project was the potential lack of space in the area that was determined to be best suited for the new machine with regards to utility.

In need of precise measurements of the manufacturing floor prior to the machine installation, they called in OASIS Alignment Services for assistance. The OASIS team met with Mark Ragust, Production Manager at Cramer Fabrics to tour the plant floor and equipment layout. It was decided that the best course of action would be for an OASIS metrology engineer to inspect the entire manufacturing area using a large volume laser scanner. Laser scanners are innovative 3D metrology tools that accurately scan thousands of data points per second in extreme detail.

In addition to scanning the manufacturing facility floor, Mr. Ragust asked that OASIS also scan and gather data on the current location of the roof joists in order to have a baseline to measure deflection. Several years prior, they learned about roof deflection due to snow load during a winter of particularly heavy snowfall. During that winter, the interior lighting of the facility began to get clipped by their overhead crane. Because the manufacturing work environment at Cramer Fabrics is especially loud and any roof creaking or cracking cannot be heard, the lights being clipped by the crane was their first indication that something was wrong. They immediately hired a crew to remove the snow and assess the roof.

Annette Studebaker, General Manager at Cramer Fabrics commented, "That winter taught us a lesson to pay closer attention to snow load on the roof. When the opportunity arose to check the alignment and location of the roof trusses in combination with locating a new piece of equipment, we thought it would be valuable information to have for the future – and it paid off."

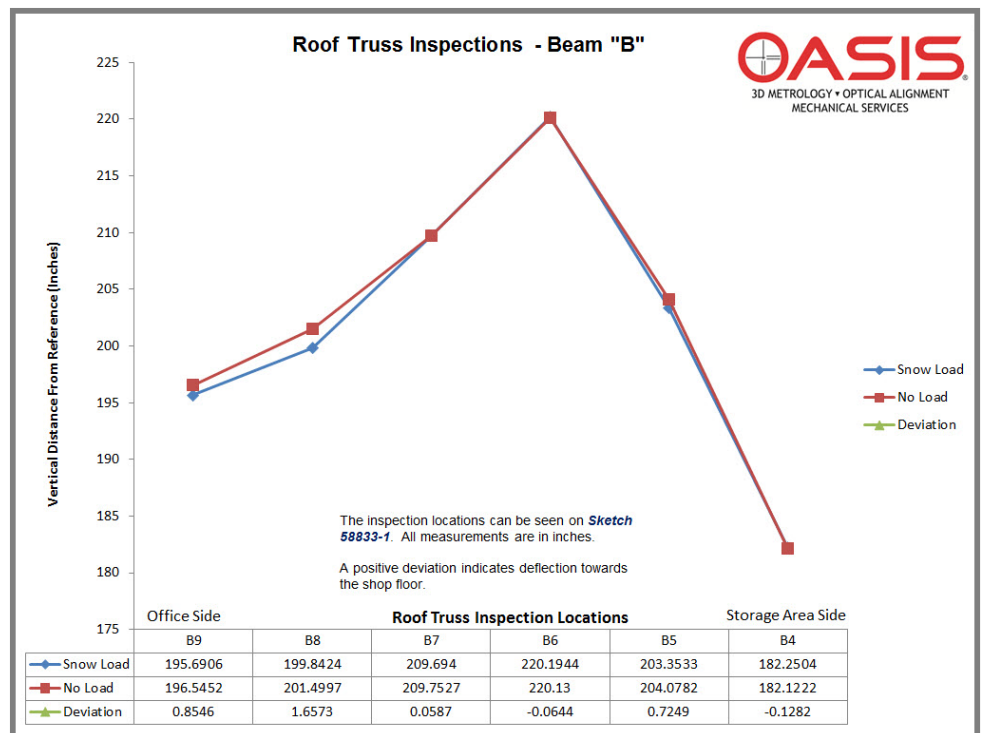
OASIS completed the scan of the manufacturing floor and the layout of all equipment, as well as gathered the data requested for the roof truss inspection in June of 2014.

The Results

Using the data cloud captured by the laser scanner, Li Guan, OASIS Metrology Engineer, created a CAD drawing to scale of the shop floor, equipment locations and the roof joists. From this report, Cramer Fabrics was able to pinpoint exactly where the new machine would be located – and additionally, they had a record of the roof joist locations without snow load.

Seven months later, and with an exceptionally snowy beginning to 2015 in New Hampshire, Cramer Fabrics again hired OASIS to inspect the roof joists now that the roof was covered with a heavy snow load. Electing to use a [laser tracker](#) for these measurements, Evan Davis, OASIS Metrology Engineer, inspected the truss locations at designated points along the roof beams. Because the 3D metrology instruments and software work together seamlessly, Mr. Davis was able to combine the data from the earlier scan of the roof joists with the data gathered by the laser tracker and quickly provide Cramer Fabrics with a report showing deviations caused by the snow load. Fortunately, for Cramer Fabrics, the deviation was minimal and within design specifications for the building.

Ms. Studebaker was pleased with the results saying, “The cost of the laser alignment process was minimal as compared to the cost of an insurance deductible and potential loss if we had roof issues. And, you can’t put a price on peace of mind. When we heard of all the roof collapses in the area due to snow load, we immediately thought it was time for a comparison. Thankfully, that process proved that we had no issue with the snow load on our roof.”



“There really is no comparison between the cost of this process as compared to the cost of roof snow removal or potential damage to personnel, equipment and business interruption even with insurance. Not to mention potential loss of life under worst case scenario. OASIS was able to determine what, if any danger there might be without risking personnel going up on a roof. If schools and municipalities aren’t considering this type of service in the future, they should be.”