



*System: CKDB*

# KINETICS® Solutions

## Sound Curtain Process Enclosure

### Client

A manufacturer of windows and doors for residential, commercial and industrial building systems.

### Issue

OSHA, Occupational Safety and Health Association, issued the manufacturer a citation regarding extreme noise levels in a key area of their manufacturing facility – aluminum debridging process.

### Solution

Kinetics local representative and an acoustical consultant selected by the client met and developed an action plan.

1. Identifying the primary and secondary noise sources;
2. Determining the design goal dictated by the OSHA noise regulation;
3. Reviewing the process flow with respect to materials and personnel;
4. Developing conceptual design options to present to the client.

Conceptual designs consisted of: perimeter treatment consisting of **NOISEBLOCK™** rigid STL-4, steel, double-wall, barrier walls; source treatment consisting of STL-4, steel, double-wall, enclosures; and sound curtain perimeter barrier wall and source enclosure options.

During the investigation it was determined that the predominant noise occurred in the 2000 Hz to 4000 Hz frequency range. This range is considered the mid to high frequency. It was determined a Kinetics KNC-100BQQ sound curtain system could solve the noise issue. This product is well suited for custom cutting and close fitting to the existing process as well as frequent and easy personnel access.

### Considerations

- “In-plant” noise initiative
- Customer requested the Kinetics representative provide product and installation
- Budget
- Time Constraints governed by OSHA citation

### Project Goals

- The target sound level of 85 dBA
- Current noise levels 110-117 dBA
- The solution could not interfere with normal traffic flow of process and workers.

### Advantages of Kinetics Solution

Kinetics KNC sound curtain panels introduced the needed attenuation, were cost effective with performance backed by independent sound tests per applicable ASTM standards.

Kinetics Noise Control, Inc. a recognized manufacture of noise control products and services supplied all necessary products.



## Applied Products

It was determined that custom curtain conveyor enclosures consisting of close fitting conveyor covers around a main intake and discharge conveyor path and multiple intake and discharge conveyor paths plus one large enclosure around the main machining equipment was the best solution. This project required Kinetics structural steel design expertise and product diversity in order to fit and attach the proposed enclosures to the existing conveyors and machinery. Due to Kinetics manufacturing diversity, the right products were available to achieve the project requirements.

The conveyor covers and machine enclosure were manufactured of KNC-100BQQ sound curtain panels. The curtain panels were constructed of a layer of 1.0 psf, mass-loaded vinyl between two layers of 1-inch thick fiberglass quilt faced with aluminized vinyl cloth. The system included, clearview, 1.0 psf, mass-loaded, vinyl strip curtains for raw product entry and finished product exit as well as personnel access.

Kinetics local representative and engineering team worked with the installing mechanical contractor during the design and submittal phase to ensure fit to the existing process and no interference.

## Resolution

The required noise reduction was achieved and the manufacturer continues to operate with noise levels equal or less than the OSHA regulation. Due to the success of this project the manufacturer ordered four more systems, one for each of their manufacturing facilities throughout North America.



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