

The vibration and noise of a glass tempering machine at a factory are studied. Experiments were conducted to identify the sources of vibration and noise. It was found that main sources for vibration and noise are two air barrels, the air pipes from the fans to the glass tempering machine and the fans location. Solutions were suggested to reduce vibration and noise from these three main sources. One of the solutions that were implemented is placing rubber dampers beneath the air barrels and pipes which almost cancelled the horizontal vibrations in the building structure and reduced the vertical vibrations to a low value most likely coming from noise. There are two types of noise, namely, radiation noise from the fans through the fans room walls and transmitted noise through the pipes caused by turbulence. A glass wool noise insulating layer was installed on the wall between the fans room and factory to reduce radiation noise through this wall. Part of the air pipe system in the factory is made of a light material which produced the highest levels of noise above 110 dBA. These air pipes were wrapped by glass wool rolls and the noise level near them was reduced to below 100 dBA which comes from other machine parts. In addition, noise levels were reduced between 2 and 15 dBA at different points in the factory.