

# Reduction in welding fumes and smells with Zehnder Clean Air Solutions



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**Measurements of the air in a Swedish industrial facility that works primarily with welding stainless steel revealed that the air quality was worse than the outdoor air in Beijing. The solution was to install purifiers from Zehnder Clean Air Solutions.**

The fact that many of the biggest cities of the world suffer from poor air quality is no news. Many articles have been published about the issue, intensive researches have informed about the risks, and organisations

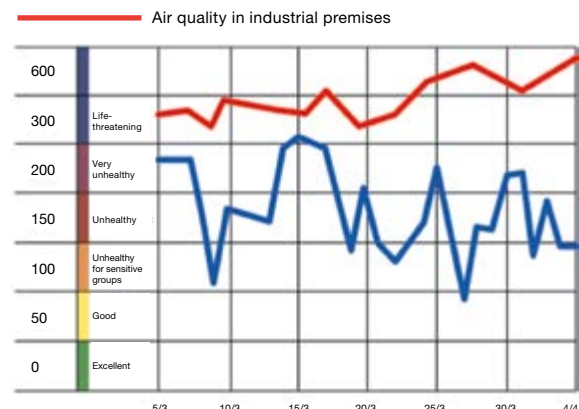
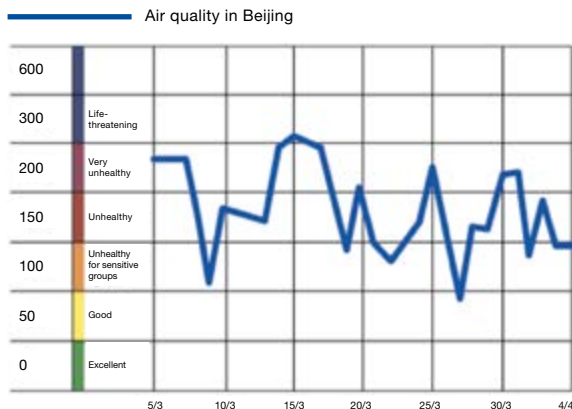
such as the EU, WHO and EPA have introduced new limit values.

One of the regions most affected by the problem is Asia – principally China, where the reverse side of the boom in economic development is a steadily worsening environment. The American EPA takes daily particle measurements at the American embassy in Beijing, and then compares the results with the air quality index. In this graph, concentrations below 50 µg/m<sup>3</sup> are classed as “excellent”. As the graph reveals,

concentrations during this 30-day period (5 March–4 April) never even come close to the “excellent” zone. The media regularly run stories about how the residents of Beijing check these values daily and then adopt measures such as keeping their children indoors when the values are above a certain level.

So it is interesting to apply the levels and recommendations regarding our external environment to the situation at our workplaces. In the graph to the right, we





have entered the values for a standard manufacturing workplace where one of the main tasks is welding stainless steel. The measurements were taken to question background levels in the working environment. The graph clearly demonstrates that during the same 30-day period, air quality at the workplace was considerably worse than the air quality in Beijing.

The company with these results decided to do something about this issue. The problem for the operators who were directly exposed to the welding fumes had already been solved by introducing equipment such as extractor fans, breathing equipment and fresh-air masks. What the company now wanted was a background environment good enough to ensure that people could spend eight hours a day in it without having to wear breathing equipment or something similar.

“The operators noted a considerable improvement in the working environment”

The suggestions the company looked at included installing a new ventilation system with heat recovery. However, they could not be sure that this would solve the problem completely. This uncertainty, combined with the high investment and operating costs, left the decision makers in doubt. At that point, Zehnder Clean Air Solutions got in touch with the company.

“Together, we decided to carry out a pilot project to make sure that we could solve the problem. An external expert was called in to perform all particle measurements,” relates Peter Krantz, CEO of Zehnder Group Nordic AB. “The measurements revealed an extremely successful result. Using Zehnder Clean Air Solutions, we had succeeded.

noted an considerable improvement in the working environment – see the graph below. The facility was no longer filled with visible welding fumes, and the smell was not as aggressive as previously.” The fact that the cost of achieving this result was only a fraction of what the other potential solutions would have cost is hardly a drawback, either.

In reducing the background level to a level below 50 µg/m<sup>3</sup> that the EPA defines as ‘excellent’. In addition, the operators

