

CASE STUDY

[MIDEL®]
SAFETY INSIDE

PROJECT: Retrofill high-rise apartments | UK

ESTER TYPE: MIDEL 7131 synthetic ester

PURPOSE: Improve underground transformer fire safety

[OVERVIEW]

Protecting high-rise residential buildings from fire is a critical engineering challenge - the potential consequences of such an event are too devastating to contemplate. In densely populated urban areas worldwide, utilities, regulators, developers and public associations are actively looking at ways to avoid any such occurrence.

Fire safety in high-rise residential buildings is a multi-faceted discipline. Sprinkler systems, fire resistant materials, alarm systems, fire escapes and emergency exits - they all play important and integral roles in the overall safety plan. But more and more utilities are looking at the electrical supply perspective in such buildings.

Such companies are taking a second look at the distribution transformers located on rooftops or basements - if they are filled with potentially flammable mineral oil - and drawing up plans to implement a safer, greener insulating fluid.

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CASE STUDY



[SITUATION]

One pioneering UK utility is leading the way in mitigating this risk, having taken the decisive action in 2019 to upgrade potentially flammable mineral oil electrical transformers to further protect residents in over 100 high-rise residential sites.

[RESULT]

They embarked on an extensive programme of corrective upgrades after a safety review downgraded the fire safety of a large number of mineral-oil filled transformers. Many of these high risk units were located in embedded substations, often in the basements of high rise apartments relying on them for electricity. The units range from 500kVa to 1000kVa.

The solution to reducing the transformer fire risk was clear; replace the mineral oil in every high risk transformer with a fire safe, biodegradable alternative - namely, MIDEL 7131 synthetic ester.

MIDEL 7131 has a high fire point of 316°C, far exceeding that of mineral oil (180°C), making it safer to specify for transformers located in residential buildings.

MIDEL Service Partner, Grosvenor Oil Services, has been retrofilling with MIDEL fluids since 2015, upgrading the assets of many operators who have found themselves in a similar situation. The technicians at Grosvenor Oil were soon able to leverage their experience of ester liquids to the benefit of the project - and the safety of residents.

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“This is an exemplary initiative to improve the safety of residents, implemented at a scale never seen before in this country. As well as saving considerable time in upgrading the assets, since retrofilling can be done in-situ, this also avoids an expensive capital replacement programme for new, fire safe transformers.”

Gavin Allen,
Managing Director, Grosvenor Oil Services (MIDEL Service Partner)

The use of MIDEL ester fluids in this project supports the following UN Sustainable Development Goals:

