

ETS 0029 – Regenerated mineral insulating oil

Product approval and audit form

Endeavour Energy's use only:

Product approval officer:..... Date received:.....

Application ID no:..... Approval no:.....

Contractor:

Contact person and details:

Manufacturer's signature: Date:

Note to applicant: This form is to be submitted with the corresponding Product approval application form.

It shall be the responsibility of the person/organisation requesting the approval for a particular type of product to be used in Endeavour Energy's network, to have this form completed by the manufacturer and returned to Endeavour Energy for examination. This form shall include measured values and page numbers, as applicable and found on the product test reports. The information provided may be used for future audit purposes.

SCHEDULE OF TECHNICAL DATA – Regenerated insulating oil				
Item description	Required by Endeavour Energy		Supplier's response	Page no.
A. General details				
Oil regeneration company name				
Oil regeneration company address				
Country of regeneration company				
Product classification	Regeneration of existing insulating oil in power transformers			
B. Standards employed				
Regenerated insulating oil (various)	(Refer ETS 0029)			

SCHEDULE OF TECHNICAL DATA – Insulating oil				
C. Test parameter description	Test method required by Endeavour Energy	Permissible limit for measured	Supplier's response	Page no.
1. Appearance	IEC 60296:2012	Clear free from sediments and suspended matter		
2. Colour	ASTM D1500-12	≤ 1.5		
3. Density @ 20 °C (kg/dm ³)	ISO 3675:1998	≤ 0.91 kg/dm ³		
4. Flash point (°C)	ISO 2719:2002	≥ 140 °C		
5. Viscosity @ 40 °C (mm ² /s)	ISO 3104:1994	≤ 12 mm ² /s		
6. Water content (ppm)	IEC 60814	< 10 mg/kg (ppm)		
7. Pour point (°C)	ISO 3016:1994	≤ -30 °C		
8. Water content (ppm)	IEC 60814	< 10 mg/kg (ppm)		
9. Neutralisation value (mg KOH/g)	IEC 62021	< 0.01 mg KOH/g		
10. Particulates removal 0.2 microns	-	successful		
11. Synthetic anti-oxidant (DBPC) Wt%	IEC 60666	0.35% ± 0.05%		
12. Potentially corrosive sulphur	IEC 62535	Non-corrosive		
13. Dielectric Dissipation Factor @ 90 deg. C and 40-60 Hz	IEC 60247	Max 0.005 ≈ ≤ 5 mrad		
14. Dielectric breakdown voltage (gap between electrodes - 2.5 mm ± 0.05 mm)	IEC 60156	≥ 60 kV		
15. Interfacial tension	ASTM D971	≥ 40 mN/m		
16. Conductivity	IEC 61620	≤ 0.9 pS/m		

SCHEDULE OF TECHNICAL DATA – Insulating oil				
C. Test parameter description	Test method required by Endeavour Energy	Permissible limit for measured	Supplier's response	Page no.
17. Oxidation stability (test duration - 500 hours)	IEC 61125 Method C	Sludge - Maximum 0.8 %		
	IEC 61125 Method C	Maximum- 1.2mgKOH/g		
	IEC 61125 Method C	Maximum 0.5		