Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14151-01-00 according to DIN EN ISO/IEC 17025:2005

Period of validity: 19.02.2018 to 18.02.2023 Date of issue: 03.09.2018

Holder of certificate:

STEAG Energy Services GmbH
Catalyst Testing
Forellstraße 100, 44629 Herne

Tests in the fields:

Measurement of the NOx-Activity of SCR-DeNOx-catalysts respectively of the SO_2/ SO_3 conversion rate in a Bench-Reactor

Abbreviations used: see last page

Within the given testing field the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standard or equivalent testing methods. The listed testing methods are exemplary. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

Measurement of the NOx-Activity of SCR-DeNOx-catalysts respectively of the SO_2/ SO_3 conversion rate in a Bench-Reactor

Measured variable	Range of measurement		Characteristic test procedure
NO-reduction	0 - 97,0	%	VGB-S-302-00-2013-04-DE Section 2.3.2
Catalysts activity	calculated	Nm/h	VGB-S-302-00-2013-04-DE Section 2.3
SO_3 content	0,2 - 50,0	ppm	VDI 2462 Blatt 2
SO_2 / SO_3 conversion rate	calculated	Mol-%	VGB-S-302-00-2013-04-DE Section 2.4
Differential pressure	0 - 10	mbar	VGB-S-302-00-2013-04-DE Section 2.5

DIN EN 14791 2017-05	Stationary source emissions - Determination of mass concentration of sulphur oxides - Standard reference method
DIN CEN/TS 17021 2017-05	Stationary source emissions - Determination of the mass concentration of sulphur dioxide by instrumental techniques
DIN EN 14792 2017-05	Stationary source emissions - Determination of mass concentration of nitrogen oxides - Standard reference method: chemiluminescence
DIN EN 61207-3 2002-11	Gas analyzers - Expression of performance - Part 3: Paramagnetic oxygen analyzers
VDI 2462 Blatt 2 2011-11	Measurement of gaseous emissions - Determination of sulphur trioxide in water vapour containing exhaust gas - Condensation method
VDI 3878 2017-09	Stationary source emissions - Measurement of ammonia (and gaseous ammonium compounds) - Manual method
VGB-S-302-00-2013-04-DE 2013-04	VGB-Standard - Guideline for the Testing of DeNOx-Catalysts (German version) (here*: without section 2.9, 2.10 und 2.11)*

Abbreviations used:

DeNOx	NOx-removal in flue gas
DIN	German Institute of Standardization
EN	European Standard
CEN	European Committee of Standardization
ppm	Parts per million (volume concentration)
SCR	Selective catalytic reduction
VDI	Association of German Engineers e.V.
VGB	VGB PowerTech e. V. - Standard