



IEC TS 60079-46: A dialog on evaluating Equipment assemblies

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2017 Annual Meetings of the IECEx System:
Washington, D.C., USA
SEPTEMBER 25-29, 2017





Agenda

- 1. Overview of path to today***
- 2. IEC TS 60079-46 vs. DS 2015/001A: Key differences***
- 3. Transition from DS to TS***
- 4. Identifying an Equipment assembly***

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Overview of path to today

1. ***IECEX CoCs involving IEC 60079-14 requirements***
2. ***ExCB scopes expanded to include IEC 60079-14***
3. ***ExTAG DS 2015/001A published***
4. ***IEC/TC 31 PT 60079-46 (formerly AHG 46) formed***
5. ***IEC TS 60079-46 published***
6. ***Future of ExTAG DS 2015/001A?***

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Key differences between TS and DS Requirement No. 1

TS CoCs to show compliance with at least:

- ***IEC TS 60079-46***
- ***IEC 60079-0***
- ***ISO 80079-36***

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Key differences between TS and DS Requirement No. 2

- ***TS CoC to address “specific clauses of IEC 60079-14 that have been satisfied”***
- ***No such TS statement regarding ExTR***
 - ***However, ExTR for IEC 60079-14 still required***

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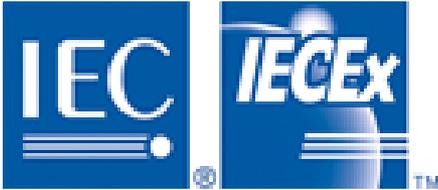
Key differences between TS and DS Requirement No. 3

TS Certificate to address:

- ***Assembly at factory by manufacturer***
- ***Assembly at the end-site***
- ***Disassembly and reassembly***
- ***Internal source of release area classification***
- ***IEC 60079-14 clauses that were satisfied***
- ***Level of inspection completed***
- ***List of only other than Ex Equipment***

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Key differences between TS and DS Requirement No. 4

- ***TS requires ExCB competencies in “the explosion protection aspects of the assembly being verified”***
- ***TS does not directly mention competencies in IEC 60079-14***

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Key differences between TS and DS Requirement No. 5

TS addresses in the following Clauses:

- ***Clause 4, General requirements***
- ***Clause 5, Design***
- ***Clause 6, Construction and assembly***

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Key differences between TS and DS Req. No. 5 (continued)

TS Clause 4, General requirements:

- ***General & explosion protection specifications***
- ***Internal source of release classification***
- ***Competencies***

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Key differences between TS and DS Req. No. 5 (continued)

TS Clause 5, Design:

- ***Items relevant to explosion protection***
 - ***Electrical & Non-electrical items***
- ***Ex Equipment, Ex Components and other items***
 - ***Specific Conditions of Use***
- ***Documented Item list***
- ***Interconnection wiring system***
- ***Assembly drawings / dossier***

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Key differences between TS and DS Req. No. 5 (continued)

TS Clause 6, Construction and assembly

- ***Disassembly and reassembly***
- ***System interfaces***
- ***Ignition hazard assessment (all hazards)***
- ***Calculations***
- ***Inspection & testing (including Annex C)***
- ***Validation and documentation***
- ***Instructions***

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Key differences between TS and DS Requirement No. 6

TS requires:

- ***“60079-46” as type of protection***
- ***External markings for Ex Components, other items***

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Transition from DS to TS

- ***Effective immediately or transition period?***
- ***What about existing CoCs to DS?***
 - ***Will they be permitted to remain to DS?***
 - ***Will they be permitted to be revised to DS?***
 - ***Will they be required to upgrade to TS?***
- ***What about new CoCs in process during transition?***
 - ***Will they be permitted to be issued to DS?***
- ***IECEx transition can identify any issues with TS***

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Identifying an Equipment assembly

TS defines Equipment assembly as:

pre-manufactured combination of Ex Equipment, together with other parts as necessary, that are electrically or mechanically interconnected that are pre-assembled prior to being placed into service at the end-user site, and that can be disassembled and then re-assembled at the end-user site

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Identifying an Eqpt. assembly (cont.)

TS Scope exclusions include:

- ***Equipment entirely covered by other types of protection***
- ***IEC 60079-13, IEC TR 60079-16***
- ***Installation & area classification at end-user site***
- ***Group I applications***

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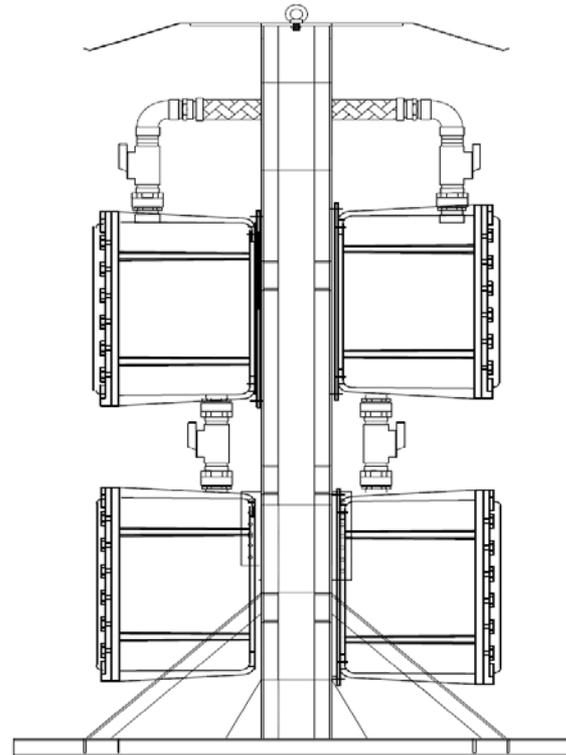
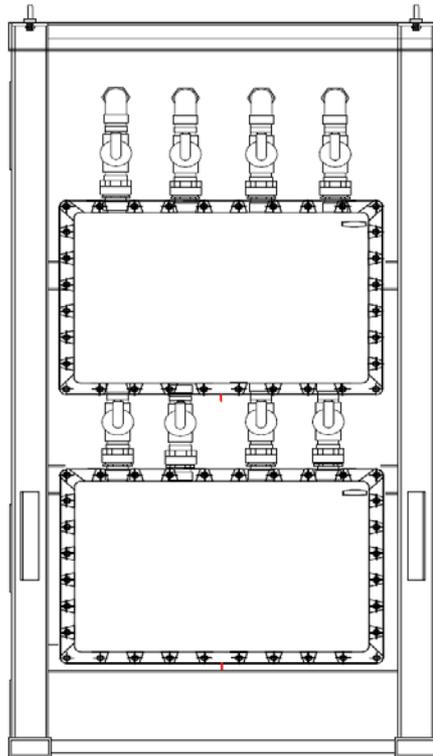
Identifying an Eqpt. assembly (cont.)

TS Equipment assembly examples, or not...





“Ex d” enclosure skid example



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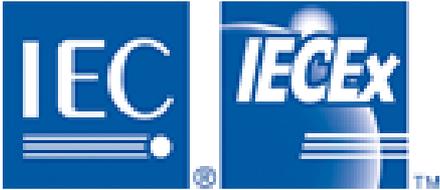


“Ex dhp” purged system example



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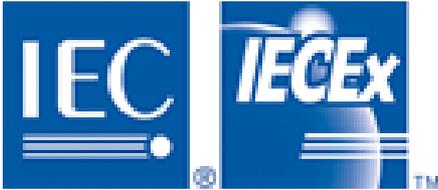


“Ex eh” pump skid example

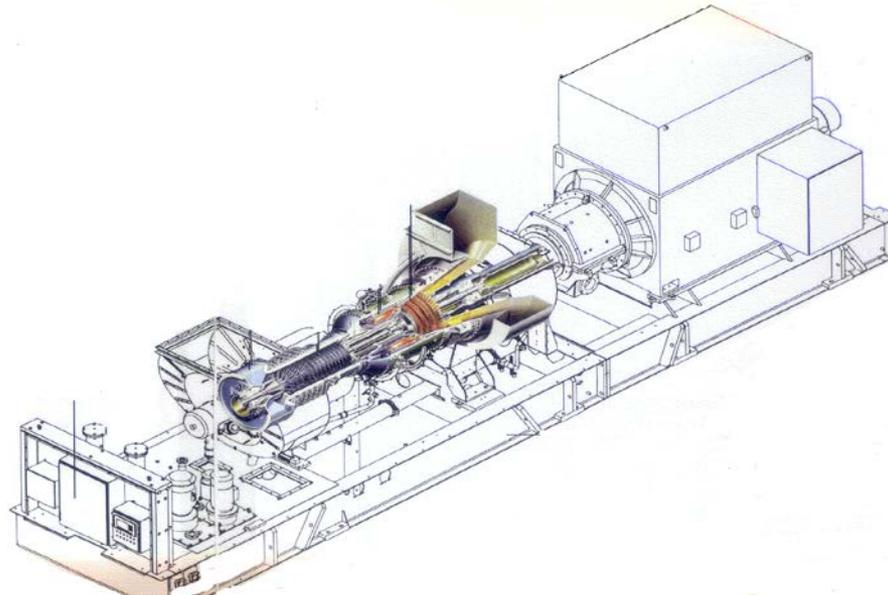


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Turbomachinery example



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Questions



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