Session 16 – Area Classification Examples
Who Determines Area Classification Boundaries?

Internationally/Europe

CENELEC EN 60079-10

Energy Institute RP15

IEC 60079-10

UK BS7671-2008

Variety of Domestic or International Documents
Who Determines Area Classification Boundaries?

North America

American Petroleum Institute

National Fire Protection Agency

NEC & CEC Electrical Codes

Industry Practices
GUIDELINES FOR DESIGN OF FIXED OFFSHORE INSTALLATIONS 2009

Chapter 9. Area Classification and Electrical Equipment

GUIDELINES FOR DESIGN OF FIXED OFFSHORE INSTALLATIONS 2008

Horizontal section

Opening (door)  Self-closing door

Zone 1  Zone 2  Unclassified

Fig. 5 Indoor premises and areas near openings
IP 15: Area Classification code for installation....

Research report: Dispersion modelling and calculations in support of
EI Model code of safe practice Part 15: Area classification code for installations handling flammable fluids

2nd edition
Examples of API 505 Installations

Figure 47—Junction Box in a Nonenclosed Adequately Ventilated Area Connected to an Electric Submersible Pump

Figure 48—Typical Routing Production Storage and Offloading Unit (P&O)
Examples of 60079 Zone Installations

15.1 INDUSTRIAL PUMP
Outdoors, pumping flammable liquid

Not to scale

Ground level

Zone 1
Zone 2

Source of release (pump seal)
Examples of 60079 Zone Installations
Examples of 60079 Zone Installations

15.3 PRESSURE RELIEF VALVE
Open air from process vessel

Source of release
(vent outlet diameter 25 mm)

15.4 PROCESS MIXING VESSEL
Indoor vessel, opened regularly for operations

Zone 0
Zone 1
Zone 2

Drain below ground level
Process liquid

Ground level
Examples of 60079 Zone Installations

15.7 HYDROGEN COMPRESSOR
In a building open at ground level

Not to scale

Bottom of enclosed area

Compressor area

Zone 2
Examples of 60079 Zone Installations

15.8 FLAMMABLE LIQUID STORAGE TANK
Outdoors with fixed roof (not floating roof)

- Zone 0
- Zone 1
- Zone 2

Liquid surface

Sump
Examples of 60079 Zone Installations
Comparison of Zone Installations

The key point to understand is that even with a harmonization of electrical equipment and installation guidelines is underway in the world, area classification guidelines can and are still country specific....

In general... When in Rome....