

# ANSI/UL 913-88, INTRINSICALLY SAFE SPECIFICATION

## CLASS I – Flammable Gases, Vapors or Liquids

### Class I Area Classification

#### Division 1:

Where ignitable concentrations of flammable gases, vapors or liquids can exist all of the time or some of the time under normal operating conditions.

#### Division 2:

Where ignitable concentrations of flammable gases, vapors or liquids are not likely to exist under normal operating conditions.

#### Zone 0:

Where ignitable concentrations of flammable gases, vapors or liquids can exist all of the time or for long periods of time under normal operating conditions.

#### Zone 1:

Where ignitable concentrations of flammable gases, vapors or liquids can exist some of the time under normal operating conditions.

#### Zone 2:

Where ignitable concentrations of flammable gases, vapors or liquids are not likely to exist under normal operating conditions.

#### Class I Groups:

A (Acetylene)  
B (Hydrogen)  
C (Ethylene)  
D (Propane)

#### Zone 0, 1, 2

IIC (Acetylene & Hydrogen)  
  
IIB (Ethylene)  
IIA (Propane)

#### Class I Temperature Codes:

##### Division 1 and 2

T1 ( $\leq 450^{\circ}\text{C}$ )  
T2 ( $\leq 300^{\circ}\text{C}$ )  
T2A, T2B, T2C, T2D  
( $\leq 280^{\circ}\text{C}$ ,  $\leq 260^{\circ}\text{C}$ ,  $\leq 230^{\circ}\text{C}$ ,  $\leq 215^{\circ}\text{C}$ )  
T3 ( $\leq 200^{\circ}\text{C}$ )  
T3A, T3B, T3C  
( $\leq 180^{\circ}\text{C}$ ,  $\leq 165^{\circ}\text{C}$ ,  $\leq 160^{\circ}\text{C}$ )  
T4 ( $\leq 135^{\circ}\text{C}$ )  
T4A ( $\leq 120^{\circ}\text{C}$ )  
T5 ( $\leq 100^{\circ}\text{C}$ )  
T6 ( $\leq 85^{\circ}\text{C}$ )

##### Zone 0, 1, 2

T1 ( $\leq 450^{\circ}\text{C}$ )  
T2 ( $\leq 300^{\circ}\text{C}$ )  
  
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T3 ( $\leq 200^{\circ}\text{C}$ )  
  
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T4 ( $\leq 135^{\circ}\text{C}$ )  
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T5 ( $\leq 100^{\circ}\text{C}$ )  
T6 ( $\leq 85^{\circ}\text{C}$ )

## **CLASS II – Combustible Dusts**

### **Class II Area Classification**

#### **Division 1:**

Where ignitable concentrations of combustible dusts can exist all of the time or some of the time under normal operating conditions.

#### **Division 2:**

Where ignitable concentrations of combustible dusts are not likely to exist under normal operating conditions.

#### **Class II Groups**

##### **Division 1 and 2:**

E (metals – Div. 1 only)

F (coal)

G (grain)

#### **Class II Temperature Codes:**

##### **Division 1 and 2**

T1 ( $\leq 450^{\circ}\text{C}$ )

T2 ( $\leq 300^{\circ}\text{C}$ )

T2A, T2B, T2C, T2D

( $\leq 280^{\circ}\text{C}$ ,  $\leq 260^{\circ}\text{C}$ ,  $\leq 230^{\circ}\text{C}$ ,  $\leq 215^{\circ}\text{C}$ )

T3 ( $\leq 200^{\circ}\text{C}$ )

T3A, T3B, T3C

( $\leq 180^{\circ}\text{C}$ ,  $\leq 165^{\circ}\text{C}$ ,  $\leq 160^{\circ}\text{C}$ )

T4 ( $\leq 135^{\circ}\text{C}$ )

T4A ( $\leq 120^{\circ}\text{C}$ )

T5 ( $\leq 100^{\circ}\text{C}$ )

T6 ( $\leq 85^{\circ}\text{C}$ )

## **CLASS III – Ignitable Fibers & Flyings**

### **Class III Area Classification**

#### **Division 1:**

Where easily ignitable fibers or materials producing combustible flyings are handled, manufactured or used.

#### **Division 2:**

Where easily ignitable fibers are stored or handled.

### **Class III Groups**

#### **Division 1 and 2:**

None

### **Class II Temperature Codes:**

#### **Division 1 and 2**

T3B, T3C

( $\leq 165^{\circ}\text{C}$ ,  $\leq 160^{\circ}\text{C}$ )

T4 ( $\leq 135^{\circ}\text{C}$ )

T4A ( $\leq 120^{\circ}\text{C}$ )

T5 ( $\leq 100^{\circ}\text{C}$ )

T6 ( $\leq 85^{\circ}\text{C}$ )

*Note:* Article 503 of the NEC limits the maximum temperature codes for Class III equipment to  $165^{\circ}\text{C}$  for equipment not subject to overloading and to  $120^{\circ}\text{C}$  for equipment that may be overloaded.