Why Electric Heat?

• There are many work situations and environments where electric heat is the only practical and safe method to deliver heat.

• Neither natural gas, heating oil, nor other heating mediums employing flame can be used.
What Causes Explosions?

• Explosion happens when fuel is exposed to an ignition source (heat)

• Fuel sources include:
  – Flammable liquids & vapours
  – Flammable dusts
  – Flammable fibers & debris
# National Electrical Code Classifications

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<tr>
<th>CLASS</th>
<th>GROUP</th>
<th>DIVISION</th>
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| I. Gases, vapors, and liquids (Art. 501) | A. Acetylene  
B. Hydrogen, etc.  
C. Ether, etc.  
D. Hydrocarbons, fuels, solvents, etc. | Normally explosive and hazardous  
Not normally present in an explosive concentration (but may accidentally exist) |
| II. Dusts (Art. 502) | E. Metal dusts (conductive*, and explosive)  
F. Carbon dusts (some are conductive,* and all are explosive)  
G. Flour, starch, grain, combustible plastic or chemical dust (explosive) | Ignitable quantities of dust normally are or may be in suspension, or conductive dust may be present  
Dust not normally suspended in an ignitable concentration (but may accidentally exist). Dust layers are present. |
| III. Fibers and flyings (Art. 503) | Textiles, wood-working, etc. (easily ignitable, but not likely to be explosive) | Handled or used in manufacturing  
Stored or handled in storage (exclusive of manufacturing) |

* NOTE: Electrically conductive dusts are dusts with a resistivity less than $10^5$ ohm-centimeter.
Hazardous Locations

Examples of CLASS 1 locations:

– Oil And Gas Drilling Rigs
– Petroleum Or Pumping Facilities
– Petrochemical Plants
– Wastewater Treatment Plants
– Solvent Extraction Plants
Hazardous Locations

Examples of CLASS 2 locations:

- Coal Fired Power Plants
- Coal Preparation/Coal Handling Facilities
- Coal Mines
- Grain Elevators
- Flour And Feed Mills
Hazardous Locations

Examples of CLASS 3 locations:

- Textile Mills
- Woodworking Plants
- Cotton Gins And Cotton Seed Mills
- Flax Producing Plants
Dimplex Explosion-proof Heaters

DX-233 Series
Fan-forced Unit Heater

DX-254 Series
Convection Heater
Dimplex DX-233 Series

- Dimplex DX-233 Series Explosion-proof Unit Heaters are designed with maximum safety and versatility in mind.
- Wide range of constructions, sizes, wattages and voltages to suit most hazardous location applications.

- Class I, Divisions 1 and 2, Groups C and D
- Class II, Divisions 1 and 2, Groups E, F and G
- Class I, Zones 1 and 2, Group IIB
Dimplex DX-233 Series

- Industry’s lowest ignition temperature code rating: T3C - 160°C/320°F
- Low 70 PSIG relief valve setting, assures initial escaping vapor temperature remains below 160°C/320°F ignition point
- Dual over-temperature protection: automatic and manual reset cut out for additional safety
- Nontoxic Propylene Glycol heat transfer fluid
Dimplex DX-233 Series

Corrosive-resistant options available in three constructions, suitable for most applications:


2. **316 stainless steel construction**, suitable for Waste Water Treatment Plants: 316 stainless steel heat exchanger, headers and tubes with aluminum fins; stainless steel cabinet; corrosive-resistant hardware; epoxy-coated motor.

3. **Heresite®-coated construction**, suitable for use in Chemical Plants where chlorides are present and includes: Heresite®-coated heat exchanger, cabinet, and fan blade; corrosive-resistant hardware; epoxy-coated motor.
Dimplex DX-254 Series

- Dimplex DX-254 Series Explosion-proof Convection Heaters are designed to provide a heavy duty and corrosion-resistant heat source

- Class I, Divisions 1 and 2, Groups B, C and D
- Class II, Divisions 1 and 2, Groups E, F and G
- Class I, Zones 1 and 2, Group IIC
Dimplex DX-254 Series

- **Wide Selection of Sizes:** Four compact sizes to fit any space with ratings from 500 to 9,500 watts
- **Sloped Top Cabinet:** Prevents objects from being set on top of the convector, which can restrict airflow and cause overheating
- **Single and Three-Phase:** Unique design provides single and balanced three-phase loads in a single element
Dimplex DX-254 Series

• **Gas and Dust Atmospheres:** Three listings cover the entire field, two for hazardous gases and vapors and one for dust particles

• **Wet Locations:** All unit sizes available with iridite-coated elements and powder-coated frames for NEMA 3 wet locations
Standard Construction Features:

- **Element** – Grade A Nickel-Chromium heating coils are insulated with ceramics and magnesium oxide from the copper heater tube and fitted with large aluminum fins locked in place.

- **Cabinet** – Heavy gauge galvanized steel cabinet is painted with a beige powder coat for durability. Cabinet should be mounted at least 6 inches (152 mm) above the floor. Factory-furnished wall brackets make installation easy.

- **Thermal Protection** – A linear limit, automatic reset thermal cut-out is built into every unit.

- **Complete Electrical Package** – For larger single phase and all three-phase units, a built-on contactor and transformer option package are available.
Delivery and Service

- Dimplex is committed to providing superior service at every step:
  - DX-233 and DX-254 Explosion-proof Heaters are delivered within three weeks of the order date
  - Dimplex provides service within two weeks or less from date of request