HEAT™
AUTHORITY

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Intertek
5001878

THERMOSAFE® and FARATHERM® Now NRTL Certified for Use in Hazardous Locations

InteliHeat North America is pleased to confirm that our THERMOSAFE® and FARATHERM® Induction Heaters now meet the current North American safety standards for hazardous locations. They have received certification by Intertek (ETL) for use in Class I, Zone 1 and 2 hazardous locations.

The heaters have the following hazardous location markings:

Thermosafe:

Class I Zone 1 AEx e IIC 170°C (T3) Gb
Class I Zone 1 Ex e IIC 170°C (T3) Gb

Faratherm:

Class I Zone 1 AEx e IIC 200°C (T3) Gb
Class I Zone 1 Ex e IIC 200°C (T3) Gb

THERMOSAFE® and FARATHERM® conform to UL Std. 60079-0, UL Std. 60079-7, ANSI/UL Std. 499. Cert to CAN/CSA Std. C22.2 No.60079-0, CAN/CSA C22.2 No.60079-7. CAN/CSA C22.2 No 88.
Class II Appliances "double insulated", no earth required

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What is Class 1 Zone 1?

- Class 1 Zone 1 is a safer, superior rating than the Class 1 Division 2 rating historically given to hazardous locations in North America. It extends the safety certification into areas where gases are frequently present and the risks are higher.
- The standards used to certify to Zone 1 are aligned with world-wide hazardous location standards under the IECEx scheme.
- The Class and Zone System is described in the National Electric Code alongside the Class and Division System.

National Electric Code

NEC 505 defines the Zone System and NEC 500 defines the Division System. It is important to note that these two systems are separate. However, as seen in the charts below, some comparisons can be made.

Comparison Between Zones and Classes/Divisions		
Standards	**NEC 505**	**NEC 500**
Atmosphere		
Gases, Vapors	**Zone 0**	**Class I Division 1**
	Zone 1	
	Zone 2	**Class I Division 2**
Dusts	**Zone 20**	**Class II Division 1**
	Zone 21	
	Zone 22	**Class II Division 2**

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AREA CLASSIFICATION			
	CLASS I - FLAMMABLE MATERIAL		
	PRESENT CONTINUOUSLY	PRESENT INTERMITTENTLY	PRESENT ABNORMALLY
IEC/EU	ZONE 0	ZONE 1	ZONE 2
USA NEC 505 & 500	ZONE 0	ZONE 1	ZONE 2
	DIVISION 1		DIVISION 2
CANADA CEC SECTION 18 & ANNEX J	ZONE 0	ZONE 1	ZONE 2
	DIVISION 1		DIVISION 2

The Thermosafe and Faratherm are certified for use in Zones 1 and 2. By direct comparison of NEC 500 and 505, you can see that Zone 2 is equivalent to Division 2. Zone 1 extends our level of protection into Division 1. The Zone classification system divides Division 1 into two zones. Zone 0 is generally only considered for mining applications, underground, or for very high concentrations of explosive gas that occur continuously. Therefore, where most industrial applications state Division 1, it will be equivalent to our Zone 1 certification. The final decision should rest with the user's risk assessment of the area in question.

NEC 505 defines the Zone System:

Zone Definitions
A place in which an explosive atmosphere in the form of a gas/vapor (or cloud of combustible dust) in air...

Zone 0 (Zone 20) ...is present continuously, or for long periods or frequently.
Zone 1 (Zone 21) ...is likely to occur in normal operation occasionally.
Zone 2 (Zone 22) ...is not likely to occur in normal operation but if it does occur, will persist for only a short period.

NEC 500 defines the Division System:

Class/Division Definitions

Class I - Contains flammable gasses or vapors in quantities large enough to produce an explosion.
Class II - Is hazardous due to the presence of combustible dust in the air.
Class III - Contains easily ignitable fibers or flyings in the air. However, the quantity of fibers and flyings suspended in the air are not likely to be large enough to cause an explosion.
Division 1 – There is a high probability of an explosive atmosphere in normal operation. This can be for part of the time, up to all the time.
Division 2 – There is a low probability of an explosive atmosphere present during normal operation.

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Certification Markings

Thermosafe
Class I Zone 1 AEx e IIC 170°C (T3) Gb
Class I Zone 1 Ex e IIC 170°C (T3) Gb

Faratherm
Class I Zone 1 AEx e IIC 200°C (T3) Gb
Class I Zone 1 Ex e IIC 200°C (T3) Gb

The gas group **IIC** and the temperature classification **T3** indicate that both the Thermosafe and the Faratherm may be used with all of the listed gases in each of the temperature classification categories T1, T2, and T3, this correlates to NEC 500 Gas Groups A through D.

The **170°C** marking for the Thermosafe indicates that this equipment will not exceed this temperature. This maximum temperature marking is **200°C** for the Faratherm product. These NEC 505 temperature classifications directly correlate to the temperature classifications outlined in NEC 500.

HAZARDOUS ATMOSPHERE CATEGORY (GAS OR DUST GROUPING)				
Explosive Atmosphere	Typical Hazard Material	North America NEC 500 - 503 / CEC 18		NEC 505 / CEC 18
		Hazard Category	Grouping	Gas Grouping
Gases and Vapors	Acetylene	Class I	Group A	IIC
	Hydrogen	Class I	Group B	IIC or IIB + H2
	Ethylene	Class I	Group C	IIB
	Propane	Class I	Group D	IIA
Dusts	Metal Dust	Class II	Group E	-
	Coal Dust	Class II	Group F	-
	Grain Dust	Class II	Group G	-
Fibers and Flyings	Wood, Paper, or Cotton Processing	Class III	-	-