

# Glossary of Terms Used in Firefighting

## **Bi-Directional Flow**

Conditions within a section of the flow path where hotter, higher pressure gases are flowing over and in an opposite direction of the cooler, lower pressure gases.

## **Bi-Directional Probe**

A device used to measure the velocity in of air flow in Meters per Second.

## **Bi-Directional Vent**

A building opening that serves as both an intake and exhaust vent of a flow path at the same time.

## **Decay Stage**

The phase of fire where the heat release rate begins to decline either due to lack of fuel (fuel limited) or lack of oxygen (ventilation limited).

## **Flow Path**

A path within a structure where heat and smoke flows, from an area of higher pressure to area of lower pressure. It must be composed of at least one intake vent, one exhaust vent and the connecting volume between the vents.

## **Fuel-Limited Fire**

A fire in which the heat release rate of growth is controlled by the amount of fuel available to the fire.

## **Great Room**

A large, open room in a house, especially a living room that doubles as a family or dining room.

## **Heat Flux**

The measure of the rate of heat transfer to a surface, usually expressed in kilowatts/m<sup>2</sup>.

## **Heat Flux Gauge**

A device used to measure the energy released by the fire in Watts per square Meter and to measure the intensity of thermal radiation field.

## **Heat Release Rate**

The rate at which heat energy is generated.

## **Heat Transfer**

The process by which energy is transferred from a body at high temperature to a body at low temperature. There are three forms of heat transfer: convection, conduction and radiation. (NFPA Handbook).

**Intended Fan Flow Path**

The desired flow path, from the positive pressure fan where clean air will be introduced into a structure, to the exhaust location where products of combustion will be exhausted from the structure. (This is meant to be a unidirectional flow, however, in reality it is a composition of multiple flow paths, including backflow.)

**Neutral Plane**

The interface of level of zero differential pressure at a compartment vent, such as a door or window, between the higher pressure hot gas flowing out of a fire compartment and the lower pressure cooler air flowing into the compartment.

**Open Concept**

Having few or no internal walls or partitions. A home with few or no internal walls or partitions.

**Open Floor Plan**

*See Open Concept*

**Oxygen Consumption Calorimeter**

A device which measure the heat release rate of a fire by evaluating the amount of oxygen consumed by the fire.

**Positive Pressure Attack**

The use of Positive Pressure Ventilation to control the flow of products of combustion, prior to fire control, with the intent of providing increased visibility and tenability for firefighters and potential occupants while fire suppression efforts are underway.

**Positive Pressure Ventilation**

The use of a high powered ventilation fan to remove products of combustion from a fire building, after a fire has been controlled.

**Smoke**

The airborne solid and liquid particulates and gases evolved when a material undergoes pyrolysis or combustion, together with the quantity of air that is entrained or otherwise mixed into the mass.

**Tenability**

The measure of whether or not a space can be occupied. This level may vary with the protective clothing provided. For example, an atmosphere may not be tenable for a civilian where it is tenable for a firefighter in full structural PPE including SCBA. In addition a compartment may be untenable for a firefighter in full structural PPE including SCBA, for example a compartment involved in flashover or post flashover conditions.

**Thermocouple**

Thermocouples consist of a pair of wires of different metals or alloys welded together at a point to form a junction. A voltage is generated across the junction, the magnitude of which depends on the temperature and the types of metals. The magnitude is compared with a compensating junction at 0oC, and the voltage difference is calibrated to give the temperature in degrees.

**Uni-Directional Flow**

Conditions within a section of flow path where the gases are all moving in the same direction.

**Uni-Directional Vent**

A building opening that serves as either an intake or an exhaust vent of a flow path.

**Ventilation Limited**

A fire in which the heat release rate or growth rate is controlled by the amount of air available to the fire. (NFPA 921)

**Ventilation-Limited Fire**

A fire in which the heat release rate of growth is controlled by the amount of air available to the fire.