



Floor Marking Guide

A best practice and applications guide to industrial floor marking

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Creative Safety Supply is a global supplier of Safety and Lean products and manufacturer of leading brands such as LabelTac® Label & Sign Printers and SafetyTac® Industrial Floor Tapes. Additionally, Creative Safety Supply offers a wide selection of floor signs, wall signs and other high visibility signage solutions.

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Why Mark Your Floors?

Utilized in every kind of professional facility, from small schools and gymnasiums to large, full-scale manufacturing and chemical processing plants, strategically employed floor marking makes open space easier for workers and visitors to understand.

Because it relays important information at the location and time it's needed, floor marking creates a safer, more efficient facility.

In many cases, floor marking lines are required by the Occupational Safety and Health Administration (OSHA) and other government agencies.

In this guide we will discuss common and creative applications for floor marking, floor marking products, and tips for using floor markings.

Applications

While there are many creative ways a facility can employ floor markings, the following are among the most utilized applications.

Hazardous Areas

It is critical to visually alert employees and visitors to potentially hazardous areas. Place floor marking in front of and around:

- **Areas in a building that contain a known hazard, such as toxic chemicals or potentially high concentrations of airborne particulates**
- **Electrical panels**
- **Potentially hazardous equipment or machinery**
- **“Open pit” or tripping hazards (these are the most common floor marking-related OSHA violation)**



Product and Material Storage

Many facilities utilize floor marking in product and material storage areas to communicate to employees where they can find what they need. These markings can be temporary for holding areas where products in various stages of production are kept or permanent for long-term storage areas that house finished products or raw materials.



Considered a key component of the 5S process in lean manufacturing, this application of floor marking yields gains in efficiency and safety by reducing worker confusion.

Equipment and Tools

Placing outlines around equipment and tools is another common application of floor marking.

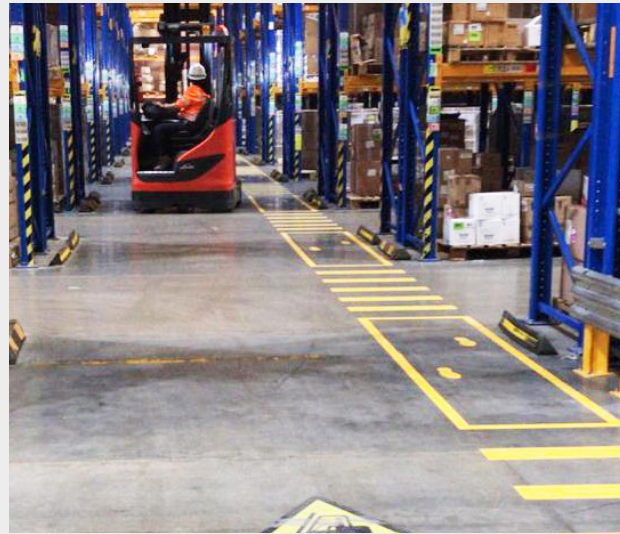
An example of this is placing white tape around the base of portable tools or machinery to indicate its proper location. This eliminates the time employees would waste searching for needed resources. Outlining machinery also enhances safety because the line can indicate the reach of the machine's components and the space it needs to operate.



Traffic Routes

The most common application of floor marking is pedestrian and vehicle pathway markings. Forklift collisions with workers are a major cause of workplace fatalities and are a clear indicator of the importance of clearly marked traffic routes.

Marking emergency exit routes using directional arrows and photoluminescent lines is also crucial for safety. If done properly, floor marking will allow employees and visitors to easily navigate your facility with no training.



Workplace Communication



Floor markings are a visual communication tool with many applications. They can be used to communicate about where operators should stand while using a tool or machine, what areas employees must avoid, and where smoking is allowed. The need for thoughtful and creative visual communication exists whenever and wherever important information needs to be conveyed.

Safety and Efficiency Improvements

Improving Safety

Floor marking creates a safer work area by making that area easier to understand. A safer workplace will result even from applications not usually thought of as safety-related. For example, having the floor marked for tool and equipment locations reduces trip hazards by ensuring that tools and equipment are not out of place.

Floor marking is an excellent way to reinforce other safety information that may have been overlooked or forgotten. Adding messages and symbols to the floor that may already be present on walls or equipment serve as reminders. For example, “Watch for Forklift Traffic” or “PPE Required Area” floor signs can be placed at dangerous locations.

While most industrial facilities already employ floor marking for safety purposes, few have studied ways to improve the effectiveness of their existing visual communication strategies. Smart, creative floor marking is an integral piece of this puzzle, enhancing the overall safety of a facility when combined with signage and labeling.

Some examples of floor marking for safety:

- Vehicular traffic paths
- Aisle markings
- Pedestrian walkways
- Exit routes
- Glow-in-the-dark markers
- “Keep Area Clear” signs
- Safety equipment/PPE signs
- Trip hazard alerts
- Mechanical hazard alerts
- Electrical hazard alerts
- Environmental hazard alerts
- Noise hazard alerts
- Emergency egress inline printed tape
- “Look left” floor sign
- “Stop” floor sign



Improving Efficiency

A workplace where employees or visitors can easily understand how an area operates based on signs, labels, and other visual cues is often referred to as a visual workplace. These cues can include placards on walls and/or machinery showing operating procedures, equipment labels, signs with important reminders, and inventory level markers, as well as floor markings.

Most large, profitable manufacturing companies have created visual workplaces, as visuals are key to lean manufacturing and 5S processes. By placing critical workplace information where it is needed, these companies have experienced less 'lost time' related to employee confusion and errors.

Floor marking is a key part of creating a visual workplace because it makes the space easier to understand. And an easier-to-understand workplace is a more efficient and productive workplace.

Some examples of floor marking for efficiency:

- Proper locations of tools and equipment
- Visual cues for different work areas: finished goods, works in progress, scrap, etc.
- Dedicated recycle, trash, or red tag areas
- Reminders of 5S or lean initiatives in the form of floor signs
- Directional arrows, which will help employees and visitors navigate your facility more quickly
- Bilingual messaging



Standards and Regulations

OSHA Clarifications

One of the top OSHA violations is “Walking/Work Surface Violations” with an average fine of \$1,632 per individual violation. These violations are issued when areas where employees walk or work are not clearly marked to identify safe pathways or highlight dangers. OSHA Standard 1910.22 dictates that all companies mark these areas to prevent accidents.

Even though fines for violations can be common, few U.S. governmental regulations exist that apply to floor marking. OSHA documents mention floor marking only twice, which can lead to confusion about the subject.

OSHA CFR 1910.22, titled “Walking-Working Surfaces,” reads simply: “Permanent aisles and passageways shall be appropriately marked.”



OSHA has clarified in follow-up interpretations that while floor markings are usually the least expensive and most convenient way of meeting this requirement, other methods appropriate for marking aisles and passageways may be used. (A dirt floor, for example, would be practically impossible to paint or apply tape to.)



Floor Marking Color Guidelines

Yellow	Aisleways & Traffic Lanes; Paths of Egress; Work Cells
White	Production; Racks, Machines, Carts, Benches, & Other Equipment
Red	Defect/Scrap Area; Red Tag Area
Orange	Material or Product Inspection; Energized Equipment
Green	Materials & Manufacturing: Finished Goods
Blue	Materials & Manufacturing: Raw Materials
Black	Materials & Manufacturing: Works in Progress
Black & Yellow	Areas which present physical or health risks to employees
Red & White	Areas to be kept clear for safety reasons
Black & White	Areas to be kept clear for operational purposes

These color code recommendations are widely accepted and comply with any interpretation of OSHA or American National Standards Institute (ANSI) codes.

This scheme isn't set by any specific law, so it can be modified to fit the needs of specific facilities. It is a useful starting point for most applications.

If modified, post a color guide in a conspicuous location.

Line Width Guidelines

To ensure maximum visibility, the required minimum width for facility aisle and floor marking lines is 2". Therefore, any width above that is considered acceptable by OSHA and ANSI.



Most typical applications use tape or painted lines with 2" - 6" widths.
Widths above 6" tend to be much more cost prohibitive and impractical to apply.

Aisle Width Guidelines

"Sufficient safe clearances" must be provided where mechanical equipment is used. The width required will vary depending upon how the aisle is utilized in the workplace. Aisles that see forklift and truck traffic will need to be wider than aisles for pedestrian traffic.



A good average aisle width is 36 inches.

Storage rooms containing flammable and combustible liquids must have aisles at least 36 inches wide.

Additionally, for emergency exit access points, 28 inches is the minimum allowed width.

Choosing the Best Method

Advancements in adhesive tape technology make floor marking tape a preferable alternative to floor paint in many industrial facilities.



Floor Paints

- Fumes require ventilation, PPE, possible facility shutdown
- Dry time required
- Spills possible
- Difficult straight or curved lines
- Requires extensive prep time
- Requires brushes, rollers, sprayers, compressors, masking, drop cloths, etc.
- Disruption of work/space for extended periods
- Requires pre-treatment of rough surfaces
- Time consuming application
- Requires abrasive machine and/or harsh chemicals for removal



Industrial Floor Tapes

- No fumes
- No dry time
- No spills
- Easy straight or curved lines
- Quick and easy prep
- Minimal tools/accessories
- Minimal if any work interruption
- Conforms to uneven surfaces like concrete, asphalt, tile, brick
- Quickly applied
- Easily removed

Traffic Levels

All facilities have different levels of traffic and different hazards, so know what kind of traffic exists in the area you plan to mark before choosing your marking materials.

Using the chart below, determine which traffic level best describes your scenario.

Light	Medium	Heavy	Extreme
<ul style="list-style-type: none">• Non-traffic areas• Infrequent foot traffic• No carts or pallet jacks• No trucks• No forklifts• Minimal or no water contact• No chemical contact	<ul style="list-style-type: none">• Regular foot traffic• Some cart or pallet jack traffic• Infrequent forklift or light-duty truck traffic• Potential for water and/or chemical contact• Occasional floor cleaning or scrubbing	<ul style="list-style-type: none">• Heavy forklift traffic• Constant foot traffic• Heavy cart or pallet jack traffic• Regular floor cleaning or scrubbing• Class 2+ truck traffic• Water and/or chemical contact	<ul style="list-style-type: none">• Constant forklift traffic• Forklift wheel pivoting• Dragging pallets or other items• Class 4+ truck traffic• Agressive floor cleaners/ scrubbers• Any other major floor hazards

Tape Grades

Different floor marking tapes exist to meet the varying needs of your facility.

There are light-duty tapes perfect for temporary marking or for areas that don't see significant traffic from employees or equipment. There are tapes that can withstand repeated abuse from forklifts, chemicals, and other industrial hazards. There are even tapes that are virtually indestructible.

Take a look at the following pages to see more information about the different grades of tape available.



Economy Vinyl Tapes

Economy vinyl tapes (often simply referred to as “vinyl tapes”) are multipurpose tapes used for a number of light-duty floor marking applications. They are also used to mark desks and workspaces and for color coordination. A common economy vinyl tape is electrical tape.

Many non-industrial, low-traffic, and office facilities are able to use these tapes for areas without hazards such as forklifts, pallet jacks, spills, and industrial floor cleaners.

Pros

- Low price point
- Available in widths under 2 inches

Cons

- Limited durability
- No removable backing liner
- Can easily stretch during installation
- Difficult to apply straight lines
- Unable to adhere to textured or porous surfaces

Common economy vinyl tapes include:

- 3M 471 Tape
 - Creative Safety Supply “5S Vinyl Tape”
-

Recommended
for traffic level:

Light



Industrial Floor Tapes

Industrial floor tapes are heavy duty tapes typically made from PVC material and ranging between 0.02" and 0.15" in thickness. Most industrial tapes feature a low-profile and a beveled edge, allowing small-wheeled carts to easily pass over lines.

These tapes are specifically engineered to withstand heavy traffic conditions such as those found in warehouses, manufacturing floors, and other tough environments where heavy equipment like forklifts and class 4 trucks operate.

Once applied, many of these tapes are also resistant to water and chemicals, which can be crucial for facilities whose floors are regularly cleaned with industrial scrubbers.

These floor tapes will outlast painted lines in most cases.

Pros

- Strong material, no stretching
- Removable backing liner
- Powerful adhesive
- Can resist heavy traffic, forklifts
- Long lifespan

Cons

- Higher price point than economy vinyl
- May be compromised by a combination of extreme weight and pivoting (i.e. large forklift tires turning on tape lines)

Common industrial floor tape lines include:

- SafetyTac®
- SafetyTac® Lean
- Brady ToughStripe
- Smart Stripe Tape
- SafetyTac® Inline Printed Tape



Recommended
for traffic level:

Light

Medium

Heavy

Specialized Floor Tapes

Specialized industrial floor tapes are engineered to withstand specific hazards that may compromise regular industrial floor tapes, the most common being damage from a combination of extreme weight paired with pivoting directly on the tape.

Even a tough industrial tape can melt or smear when a heavy vehicle plants a tire directly on it and pivots its wheel repeatedly. While not usually a problem, this can be an issue in facilities with constant, extreme equipment or vehicle traffic. To combat this, extra-dense, rigid tapes exist to withstand that extreme pressure and heat.

Floor tapes are also available that combine the toughness of industrial floor tapes with the “grit” or “grip” of anti-slip floor tapes.



Pros

- Highly resistant to specific hazards
- Extremely durable
- Powerful adhesive
- Easy application
- Long lifespan

Cons

- Typically highest price point

Common specialized floor tape lines include:

- SafetyTac® 2.0
- SafetyTac® GRIP

Recommended
for traffic level:

Light
Medium
Heavy
Extreme

Virtual Floor Marking

Virtual floor marking products provide an innovative option when you can't apply floor tapes or floor paint. These products use high power LED light to create virtual signs, which you can shine onto the floor both indoors and outdoors.

Virtual signs are a great solution for areas that receive an extreme amount of traffic, where your traditional floor tape and signs may get torn up. With virtual signs, you can mark the area clearly without worrying about your visual communications fading over time. You'll be able to display signs in different colors, including red and yellow, which makes it excellent for crosswalks and stop signs.

Not only do these virtual markings improve safety, they also reduce waste, enhance quality control, and make a minimal impact on the environment.

Pros

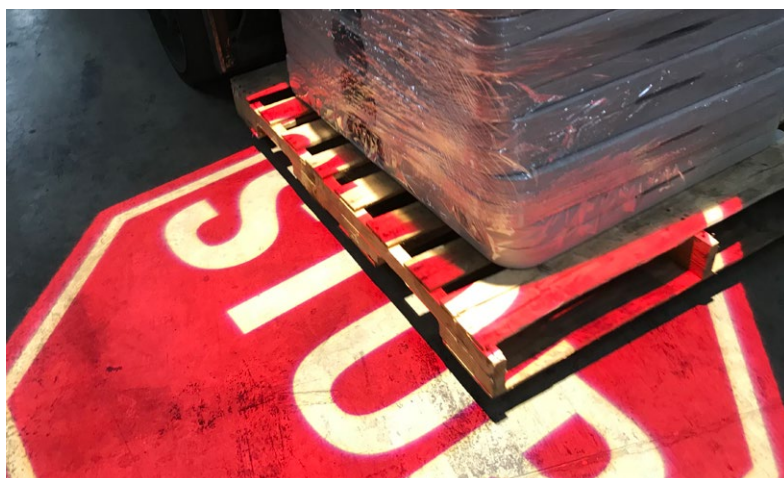
- Fast installation
- No replacing, retouching, or repainting
- Simple to relocate
- Environmentally friendly

Cons

- High price point

Common virtual floor marking lines include:

- SignCast™ S200
- SignCast™ S300



Recommended
traffic level:

Light

Medium

Heavy

Extreme



THE TOUGHEST FLOOR MARKING TAPE EVER.

SAFETYTAC® 2.0

Introducing SafetyTac® 2.0 with *ARMOR Technology*

TOUGH

SafetyTac® 2.0 is engineered from a rigid composite material and extra-strong adhesive, making it extremely resistant to forklifts and other industrial traffic

LOW PROFILE

Featuring a low profile and dual beveled edges, SafetyTac® 2.0 allows small-wheeled carts and foot traffic to pass over lines with ease and without presenting any tripping hazards

7 COLORS

Available in 7 bold, OSHA-standard colors: Yellow, White, Black, Red, Green, Orange, and Blue

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for free samples at 1-866-777-1360

 **CREATIVE**
safety supply

WITH
ARMOR
TECHNOLOGY

Floor Marking Tips

While floor marking is a relatively simple procedure, it's best to avoid the temptation to start placing tape on the floor immediately. To ensure you get the best results in your facility, spend some time considering options and developing a site-wide plan.

Get the most out of your floor marking:

- ▶ Solicit employee input for floor marking improvements.
- ▶ Develop detailed location plans before laying the first piece of tape.
- ▶ To avoid confusion, use as few colors as possible.
- ▶ Select colors and color patterns that are easy to recognize and distinguish. Simple and bright is best.
- ▶ Avoid colors and patterns too close to existing safety markings.
- ▶ Do not cover access doors, electrical outlets, and important equipment with floor markings.
- ▶ Colors chosen for pathways should not be used for other floor marking applications.
- ▶ Continuous lines of tape are not always needed. In many cases, corner markers are sufficient to show the edges of an area.
- ▶ Post your floor marking color code in a conspicuous location and train all employees on your new system.
- ▶ Be aware that in some cases, colored floor tape alone may not be sufficient. Keep an eye out for situations when additional visual communication, such as floor signs or inline printed tape, may be required.
- ▶ To determine which type of floor marking is best for you, take careful consideration of the traffic levels in your facility. This alone will be a large factor in selecting the type of floor tape, floor signs, or virtual signs that you need.

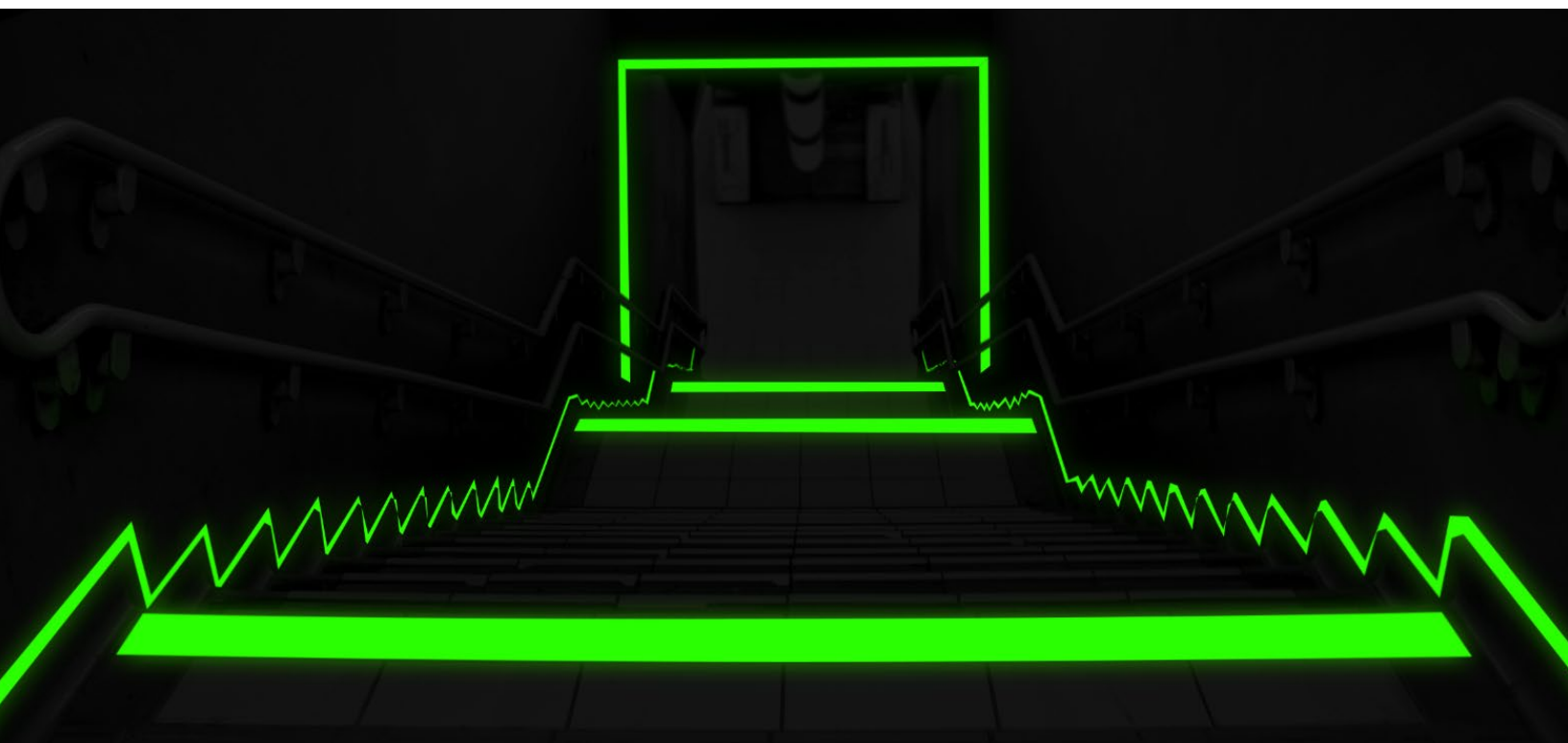
Glow-in-the-Dark Floor Marking

The use of photoluminescent (glow-in-the-dark) technology has increased dramatically in commercial and industrial facilities. In some regions it is a legal requirement. Why? These materials clearly highlight egress pathways during power outages or smoky conditions.

Phosphorescent tape is a type of photo-luminescent tape that absorbs energy from a light source during normal operating situations and then releases that energy as 'glow' when the light source is removed. The 'glow' provided, while not sufficient to illuminate an area, will make paths and doors visible if the lights go out.

Largely as the result of a report indicating that glow-in-the-dark markings in the World Trade Center buildings played a crucial role in leading survivors to safety, in 2004, New York City approved a building code law making phosphorescent markings mandatory at exit doors and in emergency exit stairwells of commercial high-rise buildings over 75 feet.

New York's initiative has been adopted as a model for other cities and organizations across the country, including the California Building Code (CBC), the International Code Council (ICC), the State of Connecticut, and the National Fire Protection Association (NFPA).



Shop all the Glow-in-the Dark floor tape and signs

creativesafety.com/glow-tape/

Floor Marking Signs

A variety of industries have begun to incorporate floor marking signs to enhance their visual communications. These signs can be used for wide variety of applications, from area awareness to reinforcing traffic patterns. They also identify the location of specific safety items, such as fire extinguishers, and indicate which way to look as workers approach an intersection in your facility.

With pictograms, colors, and symbols that are OSHA compliant, floor signs are an excellent addition to any existing floor marking program. They can also be used to enhance the organization of your workplace by indicating red tag areas, pointing out the storage of specific tools, and more. When implemented alongside floor tape, these signs help improve both safety and efficiency.



This type of floor marking sign was specifically designed to be applied alongside floor tape; each sign has a flat side that is meant to directly align with either a vertical or horizontal section of floor tape. They're created with low-profile material that withstands forklift and pedestrian traffic, and matches evenly with floor tape to prevent tripping hazards.



[Shop all the floor signs](#)

creativesafety.com/Floor-Sign/

SafetyTac® Inline Printed Tape

Floor marking is essential to a successful visual communications system, and floor tape that conveys specific messaging can further enhance the safety and efficiency of your workplace. Inline printed tape has custom messaging that can be used in a variety of situations. It warns against potential hazards, indicates emergency egress, reminds workers to put safety first, and marks out areas for trash and recycling. All of this keeps your workers safe and helps them navigate, making your facility more efficient overall.

These messages can be bilingual, in English, or in other languages such as Spanish to ensure that everyone in your facility is accommodated and able to receive communication about the safety of their environment. Inline printed tape is also fully customizable, meaning you can label your facility with tape that's relevant to your unique environment, or create floor marking lines that have your company's logo embedded.

Like other types of floor marking, inline printed floor tape was designed to hold up to heavy traffic, whether from vehicles or pedestrians, and is resistant to spills. Its reinforced adhesive stays in place for years, so you'll have it for as long as all of your other floor markings.





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