

# The Application of Dry Ice Blasting Technology

Dry ice blasting applications are available to a multitude of industries offering tremendous value. In addition to the general benefits mentioned, CO<sub>2</sub> blasting has specific benefits to some of the following industries:

## Airlines/Aerospace

In addition to safely and effectively cleaning wiring, hosing and similar materials, dry ice blasting can reduce or remove the following contaminants from equipment:

- Spray-on foam insulation
- Sealants and coatings
- Carbons
- Grease
- Oil

## Automotive

In addition Dry ice blasting can be used in a multitude of ways in the many fascist of automotive construction. They include:

- Assembly Plants
- Foundries
- Rubber and Plastic Molders
- Engine Remanufactures
- Electronics
- Assembly Plants

Robotics /Body panel assembly /Manfans /Spray booths /General maintenance

### Foundries

Coreboxes /Permanent moulds

### Rubber and Plastic Molders

Tire moulds /Seats and gasket moulds /Sealing system moulds

### Engine Remanufactures

Engine blocks and accessories /Pistons /Coils /Cylinder heads /Alloy wheels

### Electronics

Sensors and computer components

## Disaster Recovery

Providing commercial owners the ability to dramatically reduce downtime and, thereby, reduce costs, dry ice blasting is far superior to the cleaning methods typically used - water or soda blasting. This, of course, is of great interest to insurance companies also. Following is a list of how CO<sub>2</sub> blasting can be of benefit:

- Costs related to business interruption can be lessened
- Length of business interruption can be shortened - quicker cleaning; furniture and equipment doesn't have to be moved
- Black mould can be eliminated from wood structures

Soot and smoke damage can be eliminated from most surfaces

## Electrical

Since dry ice blasting provides moisture less cleaning, servicing electrical equipment has tremendous advantages. From electric motors, various contaminants can be removed from:

- Housings
- Stators
- Wiring
- Windings

CO<sub>2</sub> blasting can also be used on:

- Circuit Breakers and Boards
- Electric Production Equipment
- Electric Control Cabinets
- Circuit Breakers and Boards

Electric Motors: Three Methods for Cleaning in Place

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## Food Processing

Dry ice blasting can be used to clean:

- Conveyors
- Moulds
- Mixing equipment - uncooked residues
- Packaging equipment - paper dust
- Glue heads - glue residues
- Ovens - baked on residues
- Mixing equipment

Advantages for using CO<sub>2</sub> blasting include:

- Moulds will not be damaged since dry ice is non-abrasive
- Effective on both hot and cold surfaces
- Effective on both plastic and metal surfaces

Safe to use around electrical equipment

## Foundries

Dry ice blasting has been found to be extremely effective in the foundry industry. Some applications include:

- Electrical equipment
- Permanent moulds - removes water and silicon-based release agents
- Core boxes - removes sand and resin
- Screen and slot vents
- Die-casting machines
- Mixers
- Hydraulic power units

Advantages include:

- Cleans both hot and cold surfaces
- Cleans steel, plastic or aluminum surfaces
- Cleans permanent moulds and core boxes without damaging their surfaces

## General Maintenance

The variety of applications for dry ice blasting is no clearer than in the general maintenance industry. For example, dry ice can remove some of the following contaminants:

- Oil
- Grease
- Weld slag
- Overspray
- Adhesives
- Petroleum
- Tar
- Mold

Some machinery and equipment dry ice blasting can be used on includes:

- Manfans
- Tools
- Assembly lines
- Extruders
- Production tools
- Oven bands
- Mixers
- Hoppers
- Ovens
- Hydraulic power equipment

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## Hazardous Waste

The cost of hazardous waste removal can be monumental, and the typical cleaning methods magnify the problem many times over because the cleaning materials -- water, solvents, sand etc. -- become secondary contamination once coming in contact with the primary contaminant. They must be treated as hazardous waste as well.

Since CO<sub>2</sub> sublimates upon contact with the target surface, no secondary waste accumulates. This can amount to truly *tons* of savings.

The volume of hazardous waste is reduced to minimal amounts, and the return on investment from converting over to dry ice blasting can be attained very, very quickly.

## Pharmaceuticals

Some applications include:

- Stainless steel containers
- Reactors
- Mixers
- Tablet moulds
- Separators

Some benefits of using dry ice over steam and water-based methods include the following:

- Elimination of bacteria and micro-organism growths
- Elimination of safety hazards from cleaning around electrical equipment
- Elimination of unplanned short-circuits

## Plastic

Specific applications in the plastics industry include the reduction or removal of:

- Gloss levels
- Release agents
- Product residues
- Glue from glue heads
- Out gassing issues
- Mould damage
- Hand scrubbing

## Printing/Plating

Dry ice blasting can be used on:

- Machinery and support equipment
- Dryers and Drums

The following contaminants can also be reduced or eliminated:

- Dried ink
- Coatings
- Paper dust
- Spray powders
- Grease
- Oil

Printing requires tremendous maintenance, and finding effective solutions for minimizing expenses are extremely valuable. Dry ice blasting can reduce a full day's cleaning job down to an hour's time. It also provides a far more thorough cleaning to other traditional methods thereby increasing machine life for chains and gripper bars, fans and electric motors. In addition, since the presses can be cleaner, their resale value can be considerably greater.

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## Rubber

Dry ice blasting can help to eliminate or reduce the following contaminants:

- Release agents
- Product residues

There are other major benefits from the dry ice blasting cleaning method. Downtime is dramatically reduced because dry ice easily cleans away common contaminants from moulds and also allows for cleaning in place. Mould damage is also reduced because machinery can be cleaned in place. Further, hand scrubbing can be reduced dramatically or even eliminated. Finally, dry ice provides a superior cleaning allowing for a longer machine life.

## Utilities

Applications in the utilities industry include:

- Pad mounted switchgear
- Generator windings
- Transformer bushings
- Substation and line insulators

Dry ice blasting facilitates preventive maintenance planning which is so critical for utility operations. Because traditional cleaning methods can require considerable downtime and can result in inadequate cleaning results, contamination-related power disruptions are extremely common.

Dry ice cleaning provides the solution to these issues. Scheduled cleanings can be performed using CIP, with minimal or no downtime and providing a far superior cleaning.