DRI-EAZ

OWNER'S MANUAL

TURBOVENT 48, MINI-TURBOVENTS
INTERAIR DRYING SYSTEMS (F108, F200)

SAFETY • OPERATING INSTRUCTIONS • MAINTENANCE

For walls, floors, and other structural areas

PURCHASE DATE: _____ SERIAL NO: _____

DEALER: _____

THIS MANUAL CONTAINS IMPORTANT SAFETY WARNINGS. PLEASE READ THESE WARNINGS BEFORE USING THE TURBOVENT AND SAVE THIS MANUAL FOR FUTURE REFERENCE.

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Congratulations on your selection of the TurboVent 48 or Mini-TurboVent system for drying walls, floors and ceilings. It is our goal at Dri-Eaz Products to offer you a product that will provide a profitable return on your investment. We invite your written appraisal and suggestions for improvements. Reading this Owner's Manual will help you achieve maximum results when drying structures. This manual uses the word "TurboVent" to mean both the Turbo-Vent 48 and Mini-TurboVents.

SAFETY INFORMATION

We strongly advise that you read your TurboDryer Owner's Manual before operation. Please pay particular attention to the safety information.

Failure to observe the safety warnings in your manual can result in injury to persons, fire damage, or damage to the TurboDryer. To reduce the risk of electrical shock, fire, or personal injury, read and follow each of the warnings in your manual before using TurboDryers.

Keep TurboDryers Grounded: Always operate TurboDryers with the three pronged grounding plug and a grounded electrical outlet. Never remove the three pronged plug, use an ungrounded extension cord, or use an ungrounded adapter. The grounding pin on the TurboDryer's plug is an essential safety feature that helps reduce the risk of shock or fire in the event of an electrical hazard.

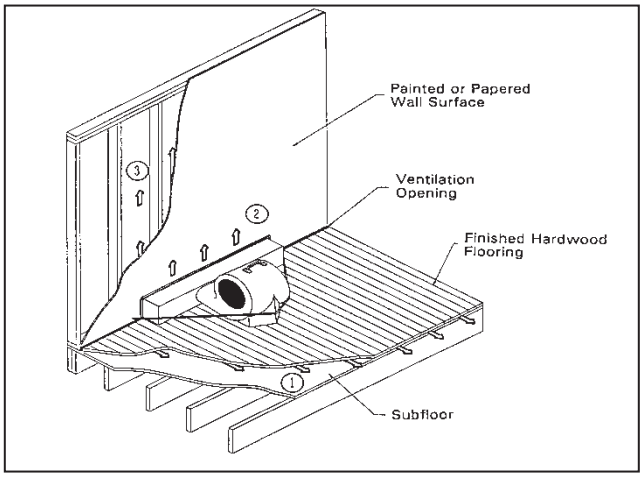
Keep Children Away: Do not allow children to play with or around the TurboDryers. Be sure that TurboDryer is inaccessible to children when left unattended. Secure all areas in which TurboDryers are left unattended while running.

CAUTION

Only TurboDryers from Dri-Eaz Products, Inc. can be used with TurboVents. Other brands of airmovers have not been tested by Dri-Eaz and may experience a motor temperature rise that is unsafe in high pressure applications. Dri-Eaz claims no responsibility if the TurboVent is used with other than Dri-Eaz Turbo-Dryers. The Snout Adapter for Mini-TurboVents fits only the Sahara TurboDryer.

PRINCIPLES OF OPERATION

The TurboVent is a wall and floor drying accessory for Dri-Eaz TurboDryers. It is designed to increase the rate of evaporation from slow drying areas. Using it, you can achieve faster, more complete structural drying while reducing damage to finished materials like hardwood flooring or painted and papered walls.



Three primary methods of installing the TurboVent 48. Mini-TurboVents can be used in the same ways.

1. Airflow can be directed under hardwood flooring for subsurface drying.

2. Airflow can be directed across wall surfaces; it will travel up the walls and across ceilings to dry both.

3. Airflow can be used to dry the interior cavities of walls by directing airflow up the inside of walls via openings cut at the baseboard level.

The principle of operation is to direct high volume airflow from a TurboDryer across, under, or into wet areas or surfaces. This airflow speeds evaporation as it removes the cushion of moisture-laden air that hangs near any wet surface.

This moist air is whisked away and dry (lower humidity) air replaces it. This constant process of removing moist air and replacing it with dry air draws moisture out of permeable materials and significantly speeds drying time. This reduces water damage to floors, walls, and ceilings.

It is highly recommended that Dri-Eaz commercial grade dehumidifiers be used in the area being dried. The moisture that is moved away from the wet materials should also be removed from the air. Dri-Eaz dehumidifiers do this as they rapidly lower humidity. Reducing the humidity is an important factor in speeding up the drying process.

INSTALLING A TURBOVENT 48

Whether drying walls, ceiling surfaces or floors, the TurboVent 48 is intended for use on the floor located against a flat wall surface. Wall moldings and baseboards must be removed to allow the vent opening to fit flush against the wall. The TurboDryer must be unplugged and turned off while attaching TurboVents.

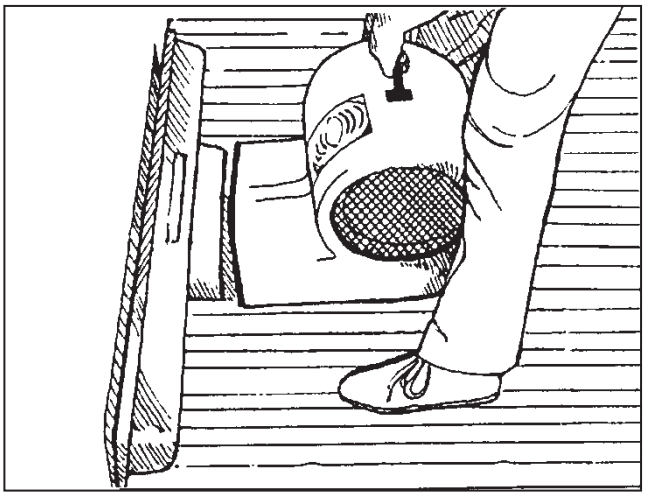
NOTE: To avoid marring hard surface floors, place a piece of foam pad under the base of the TurboDryer.

Attaching the TurboVent 48 to a TurboDryer

1. Remove baseboards and moldings, and drill holes (see Application #3.) In most cases, it is not necessary to remove carpeting.

2. Place TurboVent firmly against the wall so that oval snout points away from the wall.

3. Attach the TurboVent to the TurboDryer by sliding the TurboVent **oval** opening **into** the TurboDryer snout. The TurboVent opening should fit snugly.



Attaching TurboVent 48 to TurboDryer.

4. There are two positions to use TurboVents. Make certain that the TurboVent is in the correct position with the air opening facing up or down as appropriate.

Floor Drying: When drying floor or wall cavities, the TurboVent label should be facing up.

Wall Drying: When drying exterior wall surfaces, the TurboVent should be inverted so that the label is facing down toward the floor.

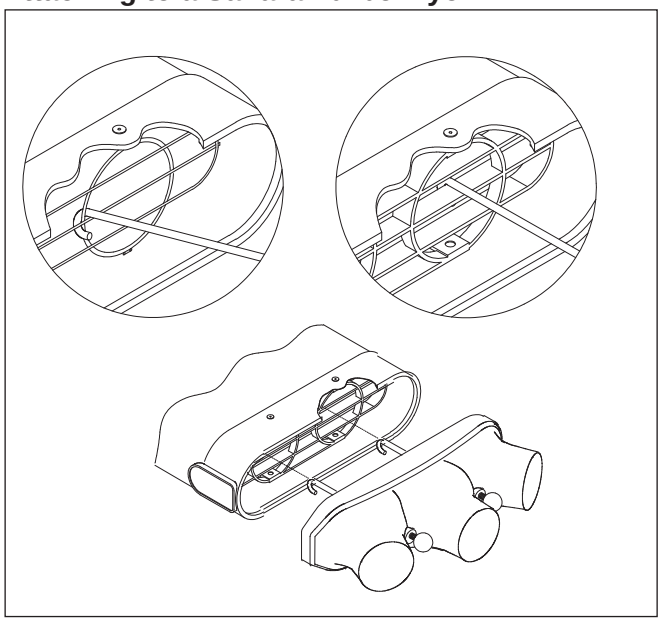
5. When using the TurboVent in a room with an unfinished floor, a 2" block of wood nailed to the floor will help maintain the TurboDryer in position.

6. Or, when on a finished floor, secure the TurboDryer and TurboVent to the wall using two 1/2" eye screws and a stretch bungee cord. The eye-screws should be attached to the wall below baseboard level.

INSTALLING MINI-TURBOVENTS

Installation procedures for Mini-TurboVents are similar to those for the TurboVent 48. Remove moldings and baseboards as needed to allow the vent openings to fit flush against the installation surface. The TurboDryer must be unplugged and turned off while attaching Mini-TurboVents.

Attaching to a Sahara TurboDryer



Clip hooks to the grill. When not using an outlet, cover with vinyl cap and a duct clamp.

The Adapter is fastened to the snout of any Sahara TurboDryer by two hooks with springs.

If the TurboDryer has a wire grill (#1), position the hooks so they are pointed horizontally, or side-to-side. Fit the Adapter over the snout. Press the black knobs so the hooks go slightly inward and hook onto the ring of the grill for strongest attachment.

If the TurboDryer has a plastic grill (#2), position the hooks so they are pointed vertically, or up-and-down. Fit the Adapter over the snout. Press the black knbs so the hooks fasten to any part of the grill.

The Adapter fits very snugly over the snout of the TurboDryer to minimize air leakage.

Cut ducting to fit the job situation. 50 feet of standard 4-inch residential dryer ducting (also available locally at hardware stores) is included. For example, the 50-ft. piece could make two 20-ft. plus one 10-ft. sections, or two 15-ft. plus one 20-ft. sections. Attach ducting with regular duct clamps (six provided) that adjust with a screwdriver or nutdriver.

If using just one or two pieces of ducting, cover the unused outlet(s) of the snout adapter with a vinyl cap and duct clamp to prevent the escape of air.

Place Mini-TurboVent firmly into position. Be sure each Mini-TurboVent is in the correct position with the air opening facing up to dry walls with a sheet of air, or down when forcing air into wall cavities or under hardwood floors.

Typical Mini-TurboVent installation.

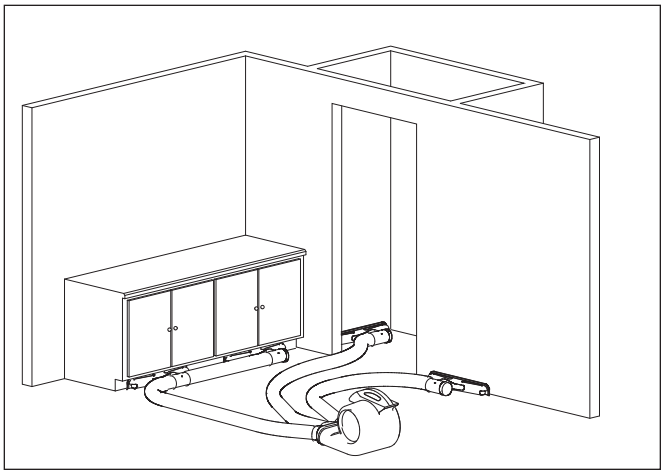
Each Mini-TurboVent can be fastened to a wall, ceiling, or built-in using drywall or other type screws. When attaching to a wall, angle the screws downward so they enter the sill plate. The holes will be covered when you replace the baseboard or cove base.

Using Mini-TurboVents in Series

Up to 9 Mini-TurboVents may be connected in series from one TurboDryer – 3 from each outlet from the snout adapter. (In the drawing above, two are connected to one outlet.)

When properly hooked up, the actual airflow into wall cavities or under hardwood floors is not great, since the holes into which the air must flow are small. This is the reason why up to 9 may be connected at one time.

However, a higher static pressure TurboDryer (such as the 1-hp. Sahara Pro, generating 3.0") will give better results than one with lower static pressure (such as the .4-hp Sahara, generating 1.5").



APPLICATION #1 DRYING CAVITIES IN WALLS AND BUILT-INS

A major use of TurboVents is for drying the interior cavities of walls, built-ins, and other structural voids. The TurboVent forces air into a cavity through holes cut in the drywall or toe-kick at the baseboard level. Air then flows into the interior areas, circulating through wet insulation, drywall, and framing. In built-ins, the air helps dry particle board, plywood, drawers and doors. Mini-TurboVents will fit the toe-kicks of built-ins not less than 3.5” high.

Air from either the TurboVent 48 or Mini-TurboVents helps ensure that sensitive materials do not deteriorate from exposure to moisture. It also prevents delayed growth of mold, mildew, and wood rot from moisture left trapped in the wall. It is usually necessary to also use surface drying measures at the same time.

Steps for Drying Interior Cavities

1. Locate Moisture Problems

Use an appropriate moisture meter to locate moisture in drywall, plaster, or within structural cavities. A non-penetrating meter will determine if the exterior covering such as drywall is wet. A penetrating meter may be needed to determine if insulation, sill plates, and subfloor under sill plates are wet.

2. Remove Baseboards

Remove baseboards or cove base along the section of wall to be dried. Mark baseboards and walls to identify them for easy replacement after completion.

3. Cut Holes

Locate wall studs and open several holes between each stud. Use a 1/2" to 1" drill bit and drill a series of holes every 2" to 12". Just a single 1/2" hole per stud cavity can be successful in many cases. Use more holes and/or larger holes for more soaked or otherwise difficult situations. The more holes you drill, or the larger holes, the more air will enter the cavity for drying. The air from the TurboDryer is forced through these holes into the cavity. After the drying process is completed the holes can be patched and then covered with the baseboard pieces.

4. Install TurboVents

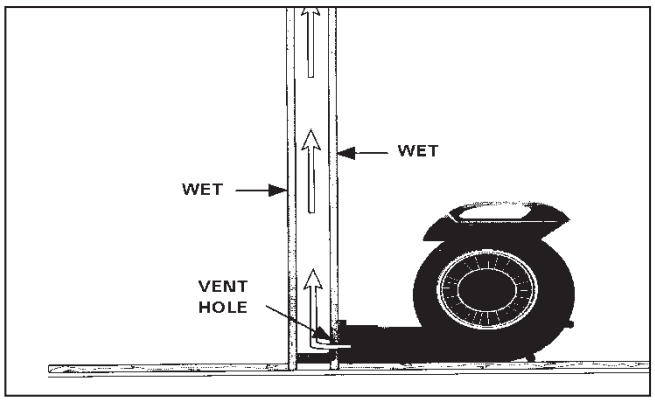
Install the TurboVent according to directions above.

5. Create ceiling ventilation openings

As the air is forced up inside a wall cavity it picks up moisture from wet materials. This moisture-laden air can be ventilated out of a wall cavity from small holes made near the ceiling. Drill one or more 1/2"

holes through drywall or plaster between the studs. These can later be filled and painted.

The step of creating ventilation openings may not be needed, especially in walls with studs that are not completely straight, or when studs have plentiful openings for wiring or plumbing, so that air easily "leaks" from one cavity to the next. This step may be more necessary when drywall is glued to studs.



Both the TurboVent 48 (shown here) and Mini-TurboVents can force air into wall cavities to dry wet materials.

Some commercial buildings use suspended ceiling tiles above which the drywall ends, leaving an open area for ventilation. If this is the case, no ceiling ventilation holes will be needed. Simply make certain that the ceiling tiles are dislaced to allow for ventilation.

6. Install TurboDryer

Operate the TurboDryer on high speed according to directions in the TurboDryer manual. Be sure to use a TurboDryer with sufficient static pressure capacity for this job. For example, a 1-hp Sahara Pro will force more air into a cavity than a .4 hp Sahara.

7. Install Dehumidifiers

Commercial grade DrizAir or DriTec dehumidifiers should be installed to reduce humidity and significantly speed the drying process.

9. Monitor Progress

Periodically check the moisture content of the materials inside the wall or built-in, using a professional moisture meter such as the Moisture Counter and/or Moisture Pro..

9. Remove Equipment

Patch and restore wall surfaces; and replace baseboards or cove base. Outside walls must normally be repaired to meet fire code. Patching compounds and tapes that meet code are available.

APPLICATION #2 DRYING WALL & CEILING SURFACES

Another application for TurboVents is drying wall surfaces. This is helpful for drying water damaged walls or reducing drying time of wet surface applications such as paint and drywall texture.

The laminar (flat) air flow emerging from the TurboDryer is approximately 18 inches wide and expands as it moves away from the TurboDryer. Using the TurboVent 48 attachment, the air emerges in a 48 inch wide pattern, over 2.5 times greater than the TurboDryer alone. Using the three vents from a Mini-TurboVent Kit, three 24-inch-wide swaths create a total of 72 inches wide or more. Thus, a larger portion of the wall is exposed to circulating air, resulting in reduced drying time.

Preparing Water Damaged Wall Surfaces

Drywall texture, paint, and some wallpapers have a low permeance characteristic which inhibits drying of the drywall beneath. When such wall coverings are exposed to water damage they may require special treatment to increase their permeability and the rate of evaporation when drying. The two basic treatments of such wall surfaces are **removal** or **perforation**.

Removal of wallpaper or paint to allow for complete drying is a labor intensive job that sometimes can be avoided by using a simple wallpaper perforating tool. This is a small roller with imbedded sharpened metal spikes. When the surface of the wall is rolled with this tool it creates thousands of small holes from which water vapor can escape by evaporation. It is recommended that the condition and cost of replacement be evaluated before perforating wallpaper.

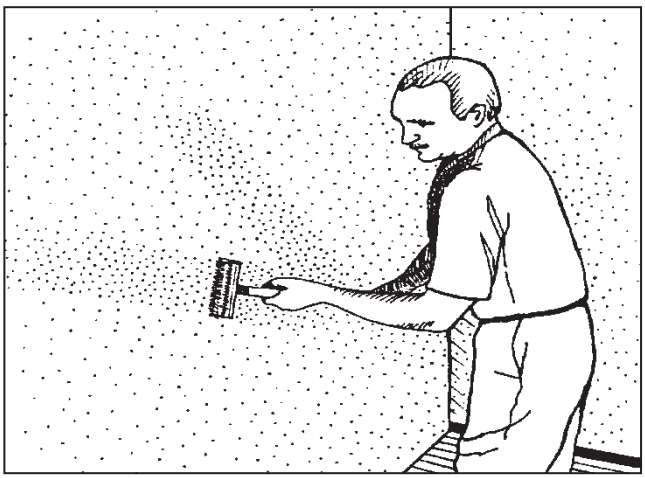
Steps for Drying Wall & Ceiling Surfaces

1. Mount the TurboVent to the Wall

Turn the TurboVent upside-down so that the label is facing toward the floor. Attach the TurboDryer to the TurboVent, and the TurboVent to the wall, according to the instructions given under "Attaching TurboVent to TurboDryer".

2. Start TurboDryer and Install Dehumidifiers

Start the TurboDryer according to instructions in manual. Install commercial grade DrizAir dehumidifiers to reduce humidity and significantly speed the drying process.



Perforation Roller used to perforate paint or wallpaper on a wall for increased permeability and faster evaporation.

3. Monitor Progress

A Moisture Pro non-destructive meter may be used to periodically check the drying process. This will help to determine if there is a need to relocate the TurboVent system to reach slow drying areas.

NOTE: The high speed airflow from the TurboDryer can cause ripples in wet paint. Adjust the speed to prevent rippling.

4. Repair Wall Surfaces

Perforations made on painted walls can be repaired. This is done by repainting with a mixture of the matching paint and a small amount of drywall taping compound. On a textured wall you can use a paint roller with a 1" nap to effectively apply this mixture. The first coat will tend to have a dull finish, and it may be necessary to give the wall a second coat of paint.

Care should be taken when assessing the damage of any wall. The homeowner may not want a wall covering perforated. The paint or wall paper may be no longer available and some wall papers are extremely costly to replace. Such considerations should be taken when estimating the job. In these cases, if the exterior wall covering is in good condition, you may consider using the TurboVent to dry the wall from the inside out. See the Application on drying Wall Cavities.

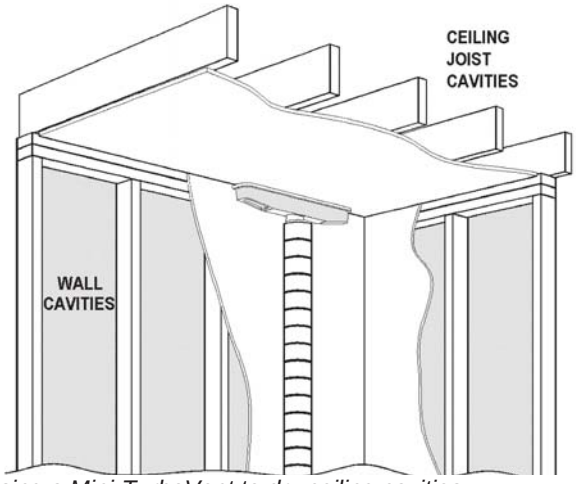
CAUTION

Always check for wiring and plumbing when cutting openings into walls, floors or ceilings.

APPLICATION #3 DRYING CEILING CAVITIES WITH MINI-TURBOVENTS

An important application of Mini-TurboVents is for drying the cavities between ceiling joists.

Mini-TurboVents force air into a ceiling cavity through holes cut into the drywall between joists. The air then flows into the interior cavities. This airflow circulates across wet insulation, drywall, and wood framing. It helps ensure that the ceiling cavity is completely dried, and prevents secondary damage from the development of mold, mildew, and wood rot made possible from trapped moisture. It speeds drywall drying, and prevents disintegration, swelling, and rusting of nails. It also helps reduce water damage to electrical wiring and fixtures.



Using a Mini-TurboVent to dry ceiling cavities

Steps for Drying Ceiling Joist Cavities

1. Locate Moisture Problems

Use an appropriate moisture meter, such as the Moisture Counter or Moisture PRO, to locate moisture hidden in ceiling areas.

Make certain that drywall is not sagging, and that all water has been allowed to drain from the ceiling, prior to beginning drydown procedures.

2. Cut Holes

Locate ceiling joists and, between each, cut a series of 1/2” holes every 2” to 12”. The air from the Turbo-Dryer is forced through these holes into the ceiling cavity. After drying is completed, the holes must be patched and repainted.

3. Install Mini-TurboVents

Install Mini-TurboVents using drywall screws. Operate the TurboDryer on high speed according to directions in the TurboDryer manual.

4. Install Dehumidifiers

Commercial grade DrizAir dehumidifiers should be installed to reduce humidity and significantly speed the drying process.

5. Monitor Progress

Periodically check the moisture content of the materials inside the wall using a moisture meter.

6. Remove Equipment

Patch and restore ceiling surfaces.

APPLICATION #4 DRYING WITH DUCTED AIR FROM MINI-TURBOVENTS

Air forced through the ducting from Mini-TurboVents snout adapter, but without the Mini-TurboVents themselves attached, can dry many areas.

Ducting from the snout adapter can be placed in different compartments of built-ins such as cabinets, to speed drying of these difficult-to-reach areas.

To introduce moving air into a crawl-space that is otherwise difficult to reach, introduce the end of one or more pieces of ducting into a hole in the floor and into the crawlspace. Such a hole may be available if a forced-air heating vent and a piece of the heating duct is removed.

Drying Above Suspended Ceilings

1. Locate Moisture Problems

Use visual inspection, plus an appropriate moisture meter, to locate moisture above suspended ceiling.

2. Install Mini-TurboVent Ducting

Displace a ceiling panel and insert the end of a piece of ducting running from the TurboDryer, WITHOUT a Mini-TurboVent attached.

3. Monitor Progress

The air from the ducting will speed drying in the suspended ceiling area. Use a moisture meter to periodically check the drying progress.

CAUTION

Use only TurboDryers from Dri-Eaz Products, Inc. with TurboVents. Other brands have not been tested by Dri-Eaz and may experience a motor temperature rise that is unsafe in high pressure applications.

APPLICATION #5 DRYING HARDWOOD FLOORS

TurboVents are very effective for drying water damaged hardwood flooring. Traditional restoration practice at one time was to remove and replace all water damaged hardwood flooring, despite the extreme cost. With TurboVents most types of hardwood floors can be completely dried, thereby eliminating the need for expensive removal and replacement.

Frequently, after drying, some refinishing will be required. This manual is not intended to provide instruction on hardwood refinishing. If you would like more information on hardwood flooring installation and finishing skills we suggest you contact:

National Wood Flooring Association
233 Old Meramec Station Road
Manchester, MO 63021. Phone (800)-422-4556

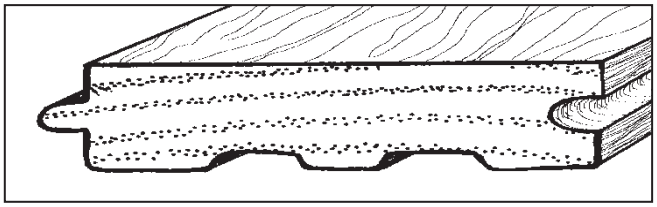
OR

National Oak Flooring Manufacturers Assoc. (NOFMA)
P.O. Box 3009
Memphis, TN 38173 Phone (901) 526-5016

Effects of Moisture on Hardwood

(techniques apply to 3/4 inch oak plank or strip hardwood flooring.)

Hardwood floors, when subjected to water, can stain, buckle, "cup", or "crown". This is caused by the natural ability of the wood to absorb moisture. Hardwood flooring is kiln dried by mills to an average moisture content of 6% to 9% MC. This is the typical moisture content of wood products found in household environments. The moisture content of wood, however, is constantly changing; it seeks equilibrium with the changing humidity of the air. This is why you may encounter moisture contents higher than 9%. A moisture meter such as a Moisture PRO should be used to determine levels of moisture in materials.



Grooves in the bottom of hardwood flooring strips allow airflow to dry both the hardwood and the subflooring.

Moisture levels in wood vary from one location to another, depending on the local climate. See the Moisture Content Map at the end of this manual.

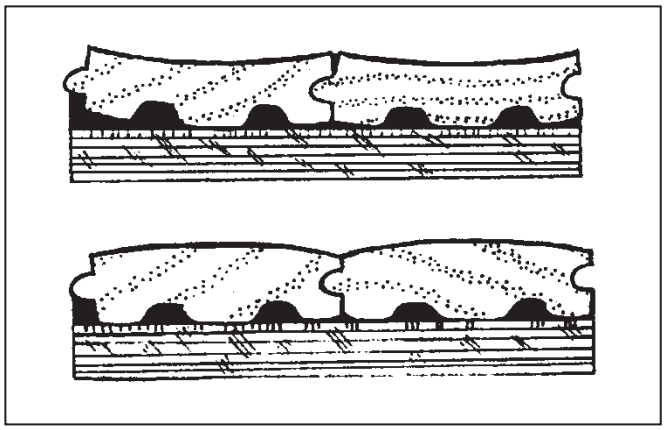
Hardwood expands in width in direct proportion to the amount of water absorbed. Hardwood flooring strips will cup as they expand away from the water. Thus if the water is exposed to the surface, the cupping action is concave (dish shaped). Or, if the moisture is entering from the bottom surface, the flooring will cup upwards in a convex shape or crown. Eventually, if left unattended, cupped or crowned hardwood will become permanently stressed and damaged.

NOTE: The length of time that the wood remains saturated is a major factor in the amount of permanent damage to hardwood flooring. It is strongly recommended that the drying process be started as soon as possible to prevent permanent damage.

With immediate attention, however, the properly equipped restoration professional can often prevent permanent damage to wood flooring exposed to water. Using advanced restoration techniques, cupped and crowned oak flooring can be restored to its original attractive state without visible or permanent damage.

Problems in Drying Hardwood Flooring

TurboVent drying helps the contractor overcome two factors that interfered with the ability to dry hardwood flooring. First, it is nearly always nailed to sub-flooring, preventing adequate access to the subsurface side. Secondly, the attractive finishes applied to the surface of the wood are very effective **moisture barriers** – having a very low *permeance* (ability to let moisture pass through). These two characteristics of hardwood flooring can effectively trap moisture.

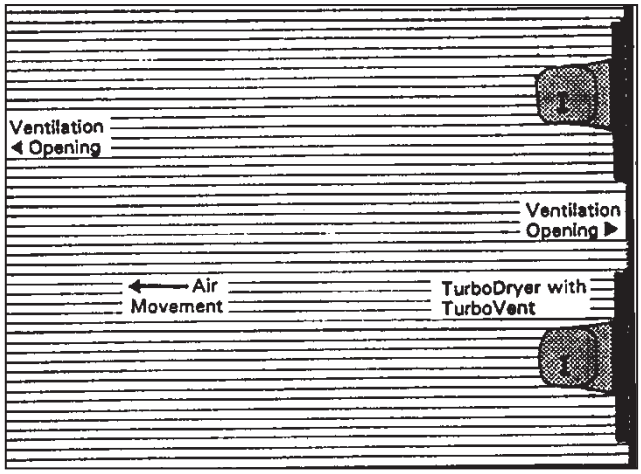


Cupping and crowning action of wet flooring strips.

Impermeable floor finishes are an obstacle to effective evaporation to drying the wood beneath. With TurboVents, the contractor is able to direct a high volume airflow underneath the wood flooring to rapidly dry the hardwood from the unfinished subsurface side.

Subsurface Drying of Hardwood Floors

Air travels from the TurboDryer through the TurboVent to the subsurface side of the flooring. The air is forced beneath the floor via a narrow ventilation opening cut in the flooring strips along a wall. Underneath the flooring, the air flows the length of the floor through channels manufactured into the bottom of each strip of hardwood.



Floor plan with TurboDryers and TurboVents in place.

The buckling action caused by swelling of the flooring also creates temporary passages through which air can flow. The air flow through these channels to emerge from the opposite side of the room. It discharges from another narrow ventilation opening cut in the flooring at the opposite wall. These ventilation openings are later covered by base board or molding.

Steps to Subsurface Dry Hardwood Floors

1. Select Location

The TurboVent must be located against a wall. Choose a wall where the flooring strips end (not a wall running parallel with the direction of the flooring).

To reduce buckling, use enough TurboVents so that the entire wet area of the floor receives simultaneous subsurface ventilation. To achieve this, interior walls such as closets and refrigerator coves may need Mini-TurboVents placed within them.

2. Remove Baseboards, Cove Base And Moldings

All moldings along the floor should be removed, especially along end walls. A small pry bar works well for removing moldings and baseboards. Stubborn finish nails may be difficult to pull out and may have to be pulled through the molding material. The holes in the moldings may easily be filled with a matching wood patch product.

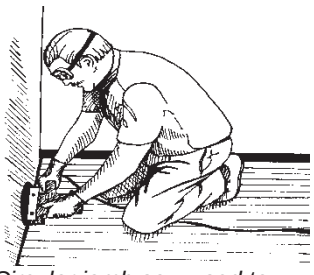
NOTE: Mark molding pieces and wall with corresponding numbers to assist in the reinstallation process.

3. Ventilation Openings

Frequently, flooring installers will leave an expansion gap between the end of the flooring strips and the wall. This gap is exposed when the baseboards or moldings are removed. This gap becomes the ventilation opening through which air will be forced under the flooring. If no gap exists, one must be made. A gap of 3/16" must be available for effective hardwood floor drying with the TurboVent.

4. Cutting Ventilation Openings

Cut a ventilation opening using a circular jamb saw. This saw allows you to cut extremely close to the wall surface, leaving an opening that can later be covered by baseboard molding. The opening cut should be approximately 3/16" wide and run the length of the area to be dried. Cut a second opening on the opposite wall to allow the moist air to escape. Observe all recommended safety precautions when using equipment of this type.



Circular jamb saw used to cut ventilation openings.

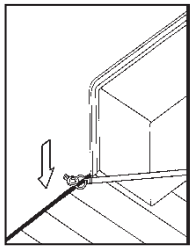
If you encounter a room without any baseboards, install new ones to cover the openings after the job is complete. When estimating such a job, remember to include the cost of new baseboard plus installation.

5. Install TurboVents or Mini-TurboVents

Install TurboVents or Mini-TurboVents according to directions above.

6. Cover Excess Openings

With the TurboVents installed, cover the excess ventilation openings. Use duct tape or an adhesive backed foam tape to cover ventilation openings next to but not covered by the TurboVent itself. This will ensure that air is forced under the flooring. Ventilation openings along the wall opposite TurboVents will be left uncovered to allow moist air to freely flow out.



Cover ventilation openings.

7. Install TurboDryer

Operate TurboDryer on high speed according to directions in the TurboDryer manual. Be sure to use a TurboDryer with sufficient static pressure capacity for this job, such as the Sahara Pro-HP.

8. Install Dehumidifiers

Commercial grade DrizAir Refrigerant or DriTec Desiccant Dehumidifiers should be installed to reduce humidity and significantly speed the drying process.

When drying hardwood or structural wood, the DriTec Desiccant is recommended because of its capacity to reduce interior humidity even below 5% Rh. Such exceptionally low humidity speeds up the drying of moisture from dense materials which give up moisture slowly.

9. Monitor Progress

As drying progresses, swelling and buckling should subside. TurboVents may have to be moved occasionally to reach slow drying sections of floor. A moisture meter should be used to check and monitor the moisture content of flooring.

10. Completing the Job

After the flooring is dry, the floor may need to be sanded and refinished by a qualified technician. Upon completion of refinishing, the baseboards and moldings should be replaced to cover the ventilation gaps.

Effective Drying Area of Hardwood Flooring

One TurboVent 48 can effectively dry a section of floor 48 inches or 4 feet wide; each Mini-TurboVent can dry a section 24 inches or 2 feet wide. Either method will dry a section of flooring approximately 10 to 12 feet long. If the section of floor is longer than 12 feet, you may need to use TurboVents at one end and then move them to the opposite end of the floor. Always check drying progress with a good moisture meter.

Never direct two TurboVents towards one another on the same section of floor; the airflows collide and defeat each other, lowering evaporation.

Typically, any major water damage will require multiple TurboVents. An important point to remember is that time is extremely important; the faster you get the wood dry the less chance there will be for permanent damage.

With TurboVents there is generally no need for a complete removal or refinishing of the hardwood. Costs are reduced by eliminating the need for replacing hardwood and finishes.

CAUTION

Do not allow children to play with or around the TurboDryers. Be sure the TurboDryer is inaccessible to children when left unattended. Secure all areas in which TurboDryers are left unattended while running.

Surface Drying Hardwood Floors

While subsurface drying improves drying results, the surface of the flooring provides a secondary location for evaporation to occur. Already mentioned are the difficulties in surface drying caused by buckling action and impermeable wood finishes. There is a method, however, to minimize damage to the finish (and thereby minimize refinishing expense) while increasing the overall rate of evaporation.

Using a wallpaper perforation roller, the surface of the floor can be perforated with thousands of small holes. These holes puncture the impermeable floor finish, permitting water vapor to escape or evaporate from the surface of the wood. After perforating, TurboDryers should be placed in several locations so that they blow air across the surface of the floor.

Dehumidifiers should also be used to reduce the humidity in the area being dried. As mentioned earlier, the moisture content of wood seeks equilibrium with the humidity in the air. The dryer the air, the faster the water evaporates from the wood.

Dehumidification equipment significantly speeds the drying process. DrizAir refrigerant dehumidifiers will often reduce relative humidity to about 40%. A desiccant dehumidifier may reduce humidity to under 10%, which is very helpful in rapid drying of all woods including hardwood floors.

Tenting a Hardwood Floor

"Tenting" a hardwood floor can speed drying even when TurboVents are used. The aim when tenting is to reduce the amount of air being dried. Any dehumidifier will reduce the humidity lower under a tent than when forced to dry an entire room or structure.

Cover the affected area with sheet plastic, and fasten securely with 2" painter's tape or other method. TurboVents may be covered completely by the tent so they use the super-dry air.

A DrizAir refrigerant dehumidifier may sometimes be completely covered by the tent to trap the dry air it is producing. However, the temperature under the tent must be monitored, and not allowed to exceed 100°F (38°C).

Permanent Damage to Hardwood Flooring

If the surface of the floor remains stressed in a cupped, crowned or buckled condition after drying is completed, it may remain so. In these cases, complete resanding or even replacement will be needed, followed by refinishing. Ensure that the moisture content of the wood is at or below the required percentage before refinishing. See note below and check the Moisture Content Map on the last page of this manual.

The length of time that a floor has been exposed to moisture is a major contributing factor in whether the floor can be returned to pre-flood condition. The quantity of water is also a factor. These two elements should be evaluated when assessing the level of damage and the amount of repair required.

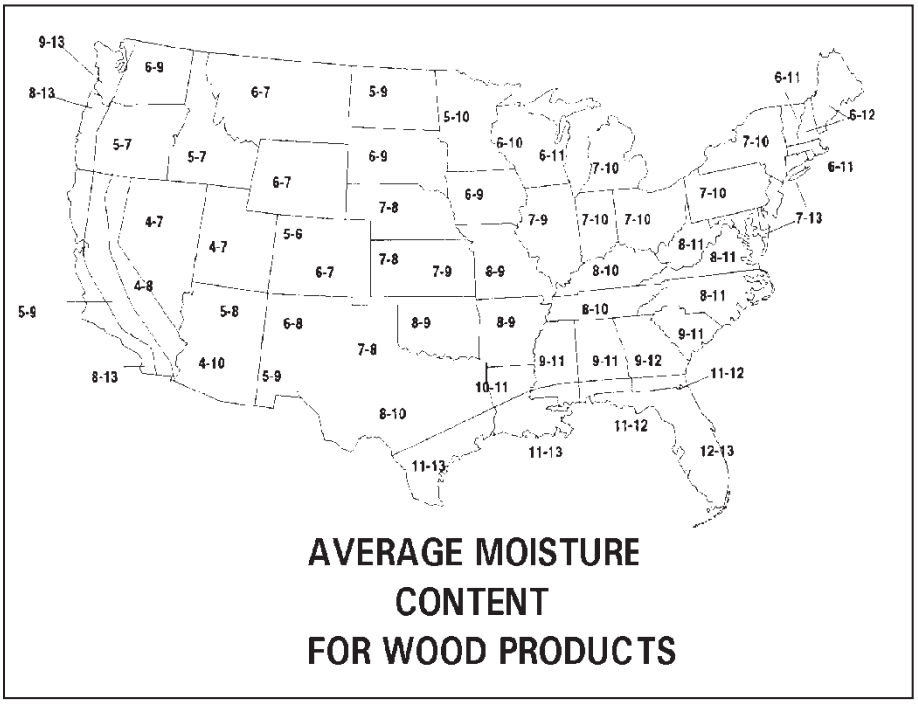
NOTE: Hardwood flooring should be allowed to reach normal moisture levels (averaging approximately 9%) before putty or finishes are reapplied. Moisture levels typically are lower during the winter months due to interior heating. Levels are higher in the summer months. ***See the Moisture Content Map***.

Cracks remaining after the drying process can usually be repaired. A trained hardwood flooring technician can easily fill cracks with a wood putty material. Cracks between boards may be normal. If the wood is abnormally dry at completion of the drying process, these cracks may disappear as dehumidification equipment is removed and normal humidity increases.

MAINTENANCE

TurboVents require very little maintenance. For best performance, keep unit clean and dry. Inspect TurboVents periodically for cracks, holes, and tears in the rubber trim and repair as necessary.

LEVELS OF MOISTURE CONTENT FOUND IN INTERIOR WOOD



In each pair of figures, the first is the percentage of average moisture content for wood used indoors during January and the second is the percentage of average moisture content during the month of July. Interior heating and weather variations result in lower moisture levels during the Winter months and higher moisture levels during the Summer months.