

## PRODUCT KNOWLEDGE TRAINING

Learn the common features and uses of each product.

### PK DESCRIPTIONS

#### 1. Copper Pipe



- Rigid copper pipe is good for new installation. Soft or flexible copper pipe is good for repair

work since it can bend around obstacles without multiple cuts and joints.

- Type K is heaviest, used in municipal, commercial, residential and underground installation.
- Type L is medium weight and is the most commonly used in residential water lines.
- Common sizes are 3/8", 1/2 and 3/4".
- Type M is hard and thin. Recommended for light domestic water lines and not permitted in some city codes or for underground use.
- Refrigeration tube has moisture removed and ends sealed for better performance of refrigerants. Often used in heater connections but may corrode. For heater connections, use flexible brass or aluminum.
- Larger sizes also used for DWV (drain-waste-vent) applications.

#### 2. PVC Pipe



- PVC stands for Polyvinyl Chloride.
- Used for carrying cold water,

irrigation, as conduit and for DWV (drain-waste-vent) projects.

- Rated by thickness and strength. Common ratings (thickest to thinnest) are Schedule 40 (most common), Class 315, Class 200 and Class 125 (generally used for irrigation).
- Available in sizes from 1/2" to 2". White in colour.

#### 3. CPVC Pipe



- CPVC stands for Chlorinated Polyvinyl Chloride.
- Used for both hot and cold water supply or chemical distribution systems.
- Good for temperatures at 93°C in pressure systems and non-pressure systems.
- Requires special solvent cement that is different from cement used for other types of plastic solvents. Most solvents will indicate this on the can.

#### 4. ABS Pipe



- Means Acrylonitrile Butadiene Styrene
- Made from a thermoplastic resin. Lightweight and easier to use than metal pipe.
- Commonly used for DWV (drain-waste-vent) applications or for underground electrical conduits.

cal conduits.

- Available as either solid wall or cellular core construction.

#### 5. Black Poly Pipe



- Used for carrying low-pressure, cold water. Common applications include golf course sprinklers, underground conduits or to carry corrosive liquids and gases.
- Good chemical and crush resistance.
- Lightweight enough to cut with an ordinary knife or a fine-toothed hacksaw blade.

#### 6. PEX Pipe



- PEX stands for crosslinked polyethylene.
- Chief advantage is its flexibility and strength. It can make turns around corners without couplings.
- In a PEX plumbing system, a separate line is run from the main water supply to each fixture in a set up much like a circuit breaker box.
- Used for carrying hot and cold water.
- Excellent chemical resistance to acids and alkalis, but do not use for fuel oil, gasoline or

kerosene systems.

- Do not weld with solvents. Join with heat fusion, flare, crimp ring or compression fittings.

#### 7. Galvanized Pipe



- Has zinc coating that prevents rust if not scratched.
- Use primarily for carrying water or waste. Do not use for gas or steam.
- Common water sizes are 3/8", 1/2", 3/4" and 1". Common waste sizes are 1-1/2", 2" and 3".
- Often sold in pre-threaded standard lengths, or can be custom threaded.
- Use only with similar galvanized pipe fittings, not with black pipe fittings.
- Measured using the I.D. (inside diameter).

#### 8. Black Iron Pipe



- Not treated for rust resistance.
- Used for carrying steam or gas.
- Used only with black iron pipe fittings, not galvanized fittings.
- Measured using the I.D. (inside diameter).

**NOTE: ALWAYS CONSULT YOUR PROVINCIAL AND LOCAL CODES**

STUDY GUIDE **NRHA** Basic Training Course in Hardware Retailing

**9. Water Supply Tube**



• Used to connect a water supply line to a faucet fixture, toilet or appliances. Several types available.

- Plastic type is flexible and inexpensive but not designed for exposed connections.
- Ribbed chrome type bends easily without kinking.
- Braided type features pre-attached connector nuts at both ends and can be flexed to fit.
- Chrome-plated copper or brass tubes are more rigid than other types and are good for exposed applications.
- The most common size is 3/8", with lengths ranging from 6" to 72".

**10. Vinyl Tubing**



• Economical and used in a variety of applications.

• Usually joined with pressure fittings and clamps.

**11. Trap**



• Installed under sinks and tubs to route wastewater to the drain. Bridges the gap between the sink tailpiece and the drain line.

- The bend in the trap uses gravity to hold

water and prevent sewer gas from seeping into the house.

- Attach using slip nuts
- Three configurations include: P trap, S trap and J bend.
- Most common sizes are 1-1/4" and 1-1/2".
- Also available is a trap with flexible tubes that help in connecting misalignments of the tailpiece and the drain line.
- Available in plastic and chrome-plated brass.

**12. Tub Drain**



- Uses an overflow opening to control draining in a tub.
- The Spring type consists of an assembly controlled by a lever that moves a pop-up plug up and down. It is easiest to install, especially in retrofits.
- The Weight type consists of an assembly that controls a weight that lifts up or down out of the drain hole. It is also controlled by a lever.

**13. Pop-Up Drain**



- Also known as a P.O. drain.
- Controls the mechanism in a lavatory sink with a plug that can open or close the drain.

**OTHER TRAINING TIPS**  
*Designed to give you confidence on the salesfloor!*  
This section is for retail skills training specific to this core product category.

**FAQs**

**Q:** What is the difference between PVC and CPVC plastic pipe?

**A:** CPVC can be used on hot and cold lines, while PVC is for cold water only. PVC is usually used as a drainpipe.

**Q:** What does O.D. and I.D. mean?

**A:** This refers to the diameter of a pipe. Some pipes are measured based on their outside diameter, or O. D. Others are measured by their inside or interior diameter, or I.D.

**Q:** Is 2" CPVC and 2" PVC the same size?

**A:** No. CPVC is measured by O.D., which makes its sizing similar to hard copper. PVC is measured by I.D., which makes its sizing similar to iron pipe.

**Q:** You stock two sizes of supply lines. Which one will I need for my toilet?

**A:** The toilet supply line head is the larger of the two. The smaller ones are sink supply lines.

**Q:** What are the advantages of plastic supply lines?

**A:** They are less expensive, do not corrode, will not kink, are more flexible and are non-toxic.

**Q:** Do I use the same type of glue for both PVC and CPVC?

**A:** No, CPVC requires special solvent cement that is different from cement used for other types of plastic pipe.

**Q:** How do I join fittings to plastic pipe?

**A:** Use a solvent welding glue, which softens the pipe and fittings so they can melt together.

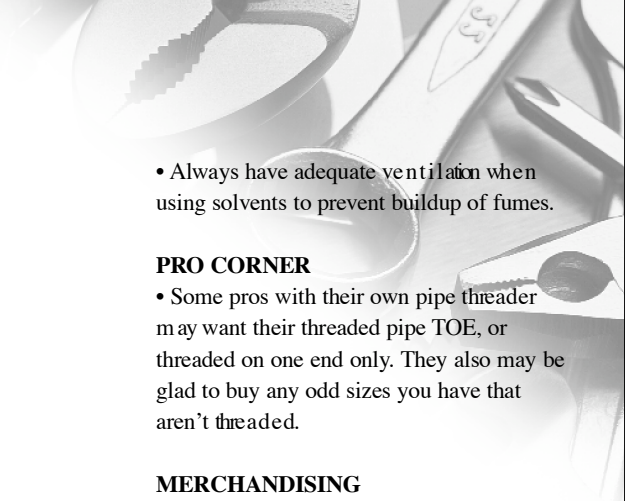
**Q:** Can the fittings be removed after they have been glued?

**A:** No, they are permanently joined and cannot be taken apart.

**Q:** What do the letters "K," "L" and "M" on copper tubing mean?

**A:** They refer to different wall thicknesses. Type K is the thickest and the heaviest. Type L is medium weight and used most often for water lines in homes. Type M is thinner and is used underground or for light domestic water lines if local codes allow.

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**Q:** There is dripping along some of my pipes. Does this indicate a leak?

**A:** Not necessarily. Warm, moist air condenses when it strikes cold pipes. To prevent this condensation, wrap the pipes in insulation.

**Q:** I have a problem with the plumbing in my house making groaning noises.

**A:** It could be that you have lost your “air cushion.” To get it back, turn the water supply off at the main valve. Turn on all the faucets around your home. Then turn on the main valve again and shut off each faucet. This should take care of the problem.

**Q:** What does the toilet vent pipe do?

**A:** It is a pipe that runs from the toilet drain to the outside, usually to the roof. This prevents air lock in the drain line.

**Q:** What diameter trap do I need for my kitchen sink?

**A:** These are almost always 1-1/2”. The 1-1/4” traps are for bathroom lavatories.

**Q:** Is a trap necessary under the sink?

**A:** Yes, you need a trap to shut off odour (sewer gas) from coming into the kitchen and bath area.

**Q:** Can I use plastic drain parts on metal drain parts under the sink?

**A:** Yes.

#### UPSELLING

• Copper pipe, while it costs more, is still the choice of many professionals and is many times used in new construction. If customers have any doubts about the toxicity of the solvents used in the installation of plastic pipe or its long-term reliability, suggest they use copper instead.

- If the water supply tube is not exposed, suggest a flexible, braided type of line. While they cost more, they are much easier to install. If the lines will be exposed, suggest they upgrade to a brass, stainless steel or chrome supply line. These will look better than the standard plastic tube.
- If the trap will be exposed, suggest using a chrome-plated brass trap. Although they are more expensive, they look better than the white plastic traps.

#### ADD-ON SALES

- Pipe Fittings
- Pipe Cutter
- Extra Pipe Cutting Wheels
- Hacksaw

- Pipe Hangers
- Pipe Strap
- Nails
- Te flon Tape
- Pipe Joint Compounds
- Pipe Wrenches
- Pipe Reamers
- Pipe Threader
- Pipe Flaring Tool
- Sandpaper
- Propane Torch
- Propane or MAPP Gas
- Solder & Flux
- Flame Shield
- Crimp Tool for PEX Pipe
- Cutting Tool for PEX Pipe
- Safety Glasses
- Flashlight
- Pipe Insulation
- Pipe Heating Cables
- Water Hammer Muffler

#### SAFETY TIPS

- When sweating a copper joint, use a metal flame shield in tight places to protect surrounding areas from catching fire.
- Wear safety glasses, a hat and gloves when cutting pipe or soldering a joint, especially if making a repair where you must reach over your head.

- Always have adequate ventilation when using solvents to prevent buildup of fumes.

#### PRO CORNER

- Some pros with their own pipe threader may want their threaded pipe TOE, or threaded on one end only. They also may be glad to buy any odd sizes you have that aren't threaded.

#### MERCHANDISING

- Pipe is tall (10 ft.) and bulky. Be sure to display it along a wall to call attention to the plumbing department and to keep it well organized.
- Arrange pipes by type and diameter with smaller diameters to the left.
- Don't let bulk rolls of plastic tubing get messy. Keep it neatly wound on the spool and have a cutter nearby for ease of use. Place smaller hoses at the top and larger hoses on the bottom.
- Display all the pieces of a trap and drain assembly on project boards in the plumbing department as a learning tool for DIYers.

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## CANADIAN IMPERIAL AND METRIC MEASUREMENTS

Canadians generally use a mixture of measurement units.

Liquid volumes are typically based on the metric (SI) system. Temperatures and distances are commonly specified using metric terminology. Weights, depending on the type of product, use either the metric or Canadian Imperial system. Lengths and dimensions of construction products, particularly for residential use, are generally in Canadian Imperial measurements. And many of the products we use are manufactured in U.S. measurements.

Canadian building codes are written using metric units. But the construction trades, particularly those in residential construction, typically use the Canadian Imperial system.

This mixture of measurement systems frequently results in many product manufacturers providing information using both systems. Unfortunately, the approaches used in presenting the “converted” measurements are not consistent. Some information is based on “exact” conversion measurements, whereas other information is based on “rounded”

measurements.

From your perspective and in communicating with your

customer, it is important to recognize that in some instances the exact conversion

is necessary and in other instances a more “rounded” conversion is appropriate.

### CONVERSION FACTORS

1 inch (in.)	=	25.4 mm	32 fluid ounces - US (oz.)	=	1 US qt.
1 foot (ft.)	=	0.3048 m	40 fluid ounces - Canadian (oz.)	=	1 Canadian qt.
1 yard (yd.)	=	0.9144 m			
1 mile (mi.)	=	1.609 km	1 fluid ounce - US (oz.)	=	29.6 mL
			1 fluid ounce - Canadian (oz.)	=	22.8 mL
1 ounce - avoirdupois (oz.)	=	28.35 g	1 cup - US (cup)	=	236mL
1 pound - avoirdupois (lb.)	=	0.454 kg	1 cup - Canadian (cup)	=	227mL
			1 quart - US (qt)	=	0.946 L
1 pound per square inch (psi)	=	6.895 kN/m <sup>2</sup>	1 quart - Canadian (qt)	=	1.136 L
1 pound per square foot (psf)	=	0.04788 kPa	1 gallon - US (gal.)	=	3.785 L
			1 gallon - Canadian (gal.)	=	4.546 L

Celsius temperature = (Fahrenheit temperature - 32) / 1.8

### SOME TYPICAL MEASUREMENTS FOR HARDWARE AND FASTENER PRODUCTS

(“rounded” conversions)

Length		Length		Length		Length		Weight	
in.	mm	in.	mm	in.	m	ft.	m	lbs	kg
1/32	0.8	1 3/8	35	48	1.2	7.5	2.3	1	0.45
1/8	3.2	1 1/2	38	60	1.5	10	3.0	10	4.5
1/4	6.4	2	51	72	1.8	12	3.7	50	22.7
3/8	9.5	4	102	84	2.1	18	5.5	100	45.4
1/2	12.7	12	305	90	2.3	25	7.6	750	340
5/8	15.9	18	457	120	3.0	50	15.2	1250	567
3/4	19.1	24	610	156	4.0	75	22.9	1900	862
7/8	22.2	30	762	216	5.5	100	30.5	2650	1202
1	25.4	36	914	312	7.9			5000	2268

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