

# Lead Free Revolution in Plumbing



# Background

I AB 1953 enacted in **CA** on Sep. 30, 2006 and goes into effect on Jan. 01, 2010;

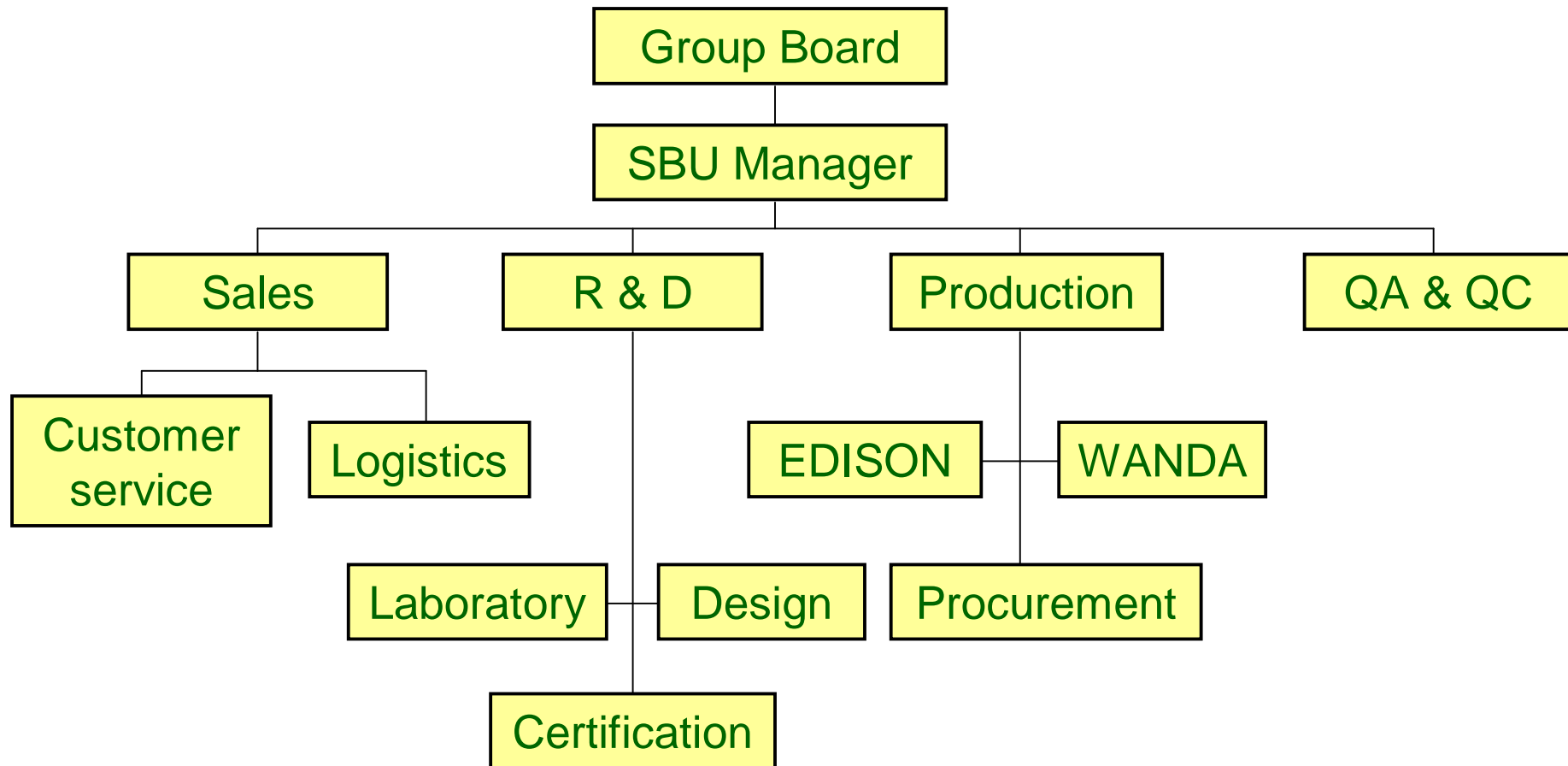
I S.0152 enacted in **VT** on June, 07, 2008 and goes into effect on Jan. 01, 2010;

I MD is on process of legislation;

I Other states and rest of world are watching **CA** and **VT**...



# Lead Free SBU Organization



# Progress of IDC 1

- ! Since 2007 IDC has been working with possible material sources of supply.
- ! Since 2007 IDC has been officially testing capability of ECO BRASS, Bismuth brass and other lead free brass.
- ! Since 2008 IDC has been focusing on solution to cover both lead free and DZR. We have run several different alloys and have founded current theoretical conclusion.



# Progress of IDC 2

Material solution:

\* ECO BRASS, C69300 and C87850 for forging, free turning and casting.

\* Bi brass, 62% copper Bi<2.3% for forging, free turning and casting.

\* Pure lead free, Mueller 2745 for forging and free turning.



# Progress of IDC 3

Material properties:

\* ECO BRASS: Safe on forging, machining and casting. Poor capability of forging and machining. Very poor cost both rod and ingot.

\* Bi brass: Cautious on forging, Safe on casting. Poor capability of forging and machining. Poor cost rod but fair cost ingot.

\* Mueller 2745 (only rod): Cautious on forging, safe on machining. Very poor capability of forging and machining. Fair cost.



# IDC facilities for lead free 1

EDISON for forging, machining, free turning and assembly.

- \* Electrical induction heating provides reliable forging temperature. Current 3 on service, another 4 is coming in.

- \* Spacious workshop allows flexibility to take care of lead free material in-house flow and control.



# IDC facilities for lead free 2

WANDA for casting, machining, free turning and assembly.

- \* One furnace was fixed only for lead free. Another one can be shifted to lead free if more capacity is required.

- \* Spacious workshop allows flexibility to take care of lead free material in-house flow and control.



# What products IDC is offering?

**IDC is offering all domestic valve and fitting required in the field by AB 1953 in two material:**

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- \* **Fitting** \_\_\_\_\_
- \* Ball valve
- \* Gate valve
- \* Global valve
- \* Swing check
- \* Boiler drain
- \* Water supply stop
- \* Any other demands by customers...



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- \* **Any other demands by customers...** \_\_\_\_\_

**My**solution  
covers your demand.



# Bi brass certification

Category	Size	No. of items	Certified by	Listing status
PEX barb fitting	3/8"~2"	183	NSF	listed
Boiler drain	1/4"~3/4"	22	NSF	listed
Push-fit fitting	1/2"~1"	30	IAPMO	listed
Ball valve	1/4"~2" F×F、 S×S	71	IAPMO	To be listed in Sep.
PEX ball valve	1/2"~1-1/4"	4	IAPMO	To be listed in Sep.
Push-fit ball valve	1/2"~1" Nut、 Rolling	6	IAPMO	To be listed in Sep.
Global valve	1/2"~3/4"	31	IAPMO	To be listed in Sep.
Water supply stop 1/4 turn	1/4"~1/2" Angle, Straight, Dual outlet	50	IAPMO	To be listed in Sep.
Water supply stop multi-turn	1/4"~1/2" Angle, Straight, Dual outlet	53	IAPMO	Expected in Nov.



# ECO BRASS certification

Category	Size	No. of items	Certified by	Listing status
PEX barb fitting	3/8"~2"	183	NSF	Listed
Boiler drain	1/4"~3/4"	22	NSF	To be listed in Sep.
Push fitting	1/2"~1"	30	IAPMO	To be listed in Sep.
Ball valve	1/4"~2" F×F、 S×S	71	IAPMO	Expected in Oct.
PEX ball valve	1/2"~1-1/4"	4	IAPMO	Expected in Oct.
Push-fit ball valve	1/2"~1" Nut、 Rolling	6	IAPMO	Expected in Oct.
Global valve	1/2"~3/4"	31	IAPMO	Expected in Oct.
Water supply stop 1/4 turn	1/4"~1/2" Angle, Straight, Dual outlet	50	IAPMO	To be listed in Sep.
Water supply stop multi-turn	1/4"~1/2" Angle, Straight, Dual outlet	53	IAPMO	Expected in Nov.
Swing Check	1/2"~4" F×F, 1/2"~2" S×S	15	IAPMO	Expected in Nov.
Gate valve	1/4"~2" Full port F×F, 3/8"~2" Full port S×S, 1/2"~2" Compact Pattern F×F CxC	27	IAPMO	Expected in Nov.

# What IDC keeps working on?

- ! Continuously obtaining market and supply information.
- ! Continuously maximize products category.
- ! Continuously Maintain delivery and quality.
- ! Continuously optimize processes, reduce cost and share the benefit with customers.
- ! Continuously research on better material and process solution.



Your Collaboration is highly  
appreciated!

**Thank You!**

