



# YOVANN'S CO.™

COMMITTED TO SAVE ENERGY

## EMERGENCY PIPE REPAIR



«TROPHÉE DE L'EXCELLENCE» TOTAL

«BEST PRACTICE» ExxonMobil



**WHY**

*Fixing steam leaks with **YOVANN'S Co.**  
method is important :*

*Steam and condensate leaks cost petrochemical plants millions of dollars:*

- In lost energy*
- Increasing emissions*
- Creating safety hazards*
- Lowering the reliability of plant operations*

*Supplier in petrochemical industry since 1990,*

***YOVANN'S Co.** has worked out a system that allows to repair pipes*

***UNDER PRESSURE OR PRESSURE SHUT DOWN***

*This system is a perfect solution for emergency repair of leaks which can interrupt the process of production.*

*These repair allow to postpone the definitive reparation for months, even years.*

***Fixing small steam leaks will last for years***

*While plant personnel would be well advised to pay attention to all utility losses, greater attention should be paid to the costs and problems associated with losses related to steam.*

*Make sure your operators know what they are doing and the impact that they can have on the total cost of production.*

*Ensure you have well trained operators*

***YOVANN'S Co. PROVIDE TO YOURS OPERATORS***

***- FREE OF CHARGE TRAINING -***

*Fixing steam leaks with **YOVANN'S Co.** product is an easy and low cost way of decreasing operational cost and increasing energy efficiency.*

***Feel free to contact **YOVANN'S Co.** for any additional information:  
demonstrations, on site application, operators training ...***

***info@yovannsco.com***

# YOVANN'S Co.

## EMERGENCY PIPE REPAIR

FOR ALL TYPES OF FLUIDS AND PIPES

REPARATIONS WHICH CAN WITHSTAND UP TO **45 Bar** AND **300°C**

THREE PRODUCTS ARE ASSOCIATED ACCORDING TO

### TWO POSSIBLE CASES

#### PRESSURE SHUT DOWN



Start with  
**FS Acier Rapide**

1



2



#### UNDER PRESSURE



Start with  
**Ruban RS-HT**

1



2



Cover with

**Bande PR**



**MECHANICAL MAINTAINING  
COMMON TO TWO VARIANTS**

FOR CHEMICAL COMPATIBILITY SEE OUR WEBSITE : [www.yovannsco.com](http://www.yovannsco.com)

**HOTLINE 7/7 : +33 6 75 11 07 57 - +33 6 66 53 00 31 - +33 7 60 76 59 60**

# PRESSURE SHUT DOWN

## **F.S. STEEL EPOXY®**

CODE : 1002



### TECHNICAL DATA

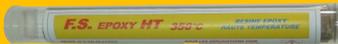
COMPRESSIVE STRENGTH .....	122 MN/m <sup>2</sup>
SHORE D HARDNESS .....	90
SERVICE TEMPERATURE .....	- 55°C to + 250°C
WORKING / USABLE LIFE at 20°C .....	3 min.
INITIAL SET .....	5 - 7 min.
FULL SET .....	1 hour

## **F.S. HT 350°**

### TECHNICAL DATA

- MIXTURE OF TITANIUM
- ANY MIXES TO MAKE
- READY TO BE USED IN 2 MINUTES
- CURES IN 60 MINUTES (COMPLETE POLYMERIZATION 48h)

TEMPÉRATURE OF USE MAX ..... **+350° C**



CODE : 1002HT

## **WATER STOP**

### TECHNICAL DATA

- MIXTURE OF EPOXY
- STICK ON WET OR IMMERGED SURFACES
- ANY MIX TO MAKE
- READY TO BE USED IN 2 MINUTES
- CURES IN 20 MINUTES (COMPLETE POLYMERIZATION 24h)

TEMPÉRATURE OF USE MAX ..... **+150° C**



CODE : 1006

### DIRECTION OF USE

CUT DESIRED QUANTITY.  
REMOVE PROTECTIVE PLASTIC.  
MIX BETWEEN FINGERS UNTIL  
UNIFORMLY COLORED .

AFTER 5-10 minutes **F.S.** WILL  
HARDEN AND START TO FORM A  
TENACIOUS BOND.  
FULLY CURED IN ONE HOUR.



# **YOVANN'S Co.**

## **PRESSURE SHUT DOWN**

**F.S. STEEL EPOXY + Bande PR**



**1. BURIED LINE OF 10"**



**2. HOLE/TEAR ON 30 cm**



**3. COVERING THE HOLE WITH F.S**



**4. RECOVERY WITH BANDE PR**



**5. DURATION OF INTERVENTION 1H**



**6. COMMISSIONING AFTER 2H**

**Ø 10" - STEAM LP**

# PRESSURE SHUT DOWN MECHANICAL REINFORCEMENT

## **Bande PR<sup>®</sup>**

### TECHNICAL DATA

TENSILE STRENGTH	ISO 527- 2	34,800 psi (2,400 bar)
COMPRESSION STRENGTH	ASTM D695-10	19,300psi (1,330 bar)
TENSILE MODULUS	ISO 527-2	1.14 x10 <sup>6</sup> psi (78,800 bar)
FLEXURAL STRENGTH	ASTM D790	31,040 psi (2,140 bar)
SHORE HARDNESS	ASTM D2240	73
COEFF. THERMAL EXPANSION	ASTM E228	7.1 x 10 <sup>-6</sup> /°C
SERVICE TEMPERATURE	DIN 52612	- 20° à +300°C



**Code: 1004 L = 7.5 cm x 280 cm**

**Code: 1004 XL = 15 cm x 560 cm**

**Code:1004 L**  
**Ø 1" to 4"**



**Code:1004 XL**  
**Ø 5" to 12"**



### DESCRIPTION

**Bande PR** IS A FIBRE REINFORCED POLYURETHANE REPAIR TAPE DESIGNED FOR THE RAPID REPAIR OF CRACKS AND LEAKS IN MOST TYPES OF PIPEWORK ENCOUNTERED IN THE ENGINEERING, CHEMICAL, MARINE AND OTHER INDUSTRIES

**Bande PR** WORKS ON WET, DRY, DIRTY OR CORRODED PIPES EVEN WORKS UNDER WATER... SALT OR FRESH ACTIVATED BY WATER IT CURES TO PRODUCE A TOUGH CHEMICAL RESISTANT WRAP AROUND PIPE.

**NON TOXIC** CONTAINS A URETHANE PRE-POLYMER, WHICH IS NOT CLASSIFIED AS HAZARDOUS.

**EASY TO USE** NO MIXING, REPAIRED PIPES CAN BE RETURNED TO SERVICE IN LESS THAN THIRTY MINUTES.

**RESISTANT** TO MOST CHEMICALS INCLUDING: MEK, ACETONE, SULPHURIC ACID, ETHYL ALCOHOL, GASOLINE, TOLUENE, DIESEL, VARSOL, CRUDE OIL, HYDRAULIC OIL ...

FOR VIDEO DEMONSTRATION AND CHEMICAL COMPATIBILITY visit our internet site :

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# **PRESSURE SHUT DOWN** **MECHANICAL REINFORCEMENT**

## ***Bande PR<sup>®</sup>***

**START APPLYING**

**F.S. Steel Epoxy**  
or  
**Ruban RS-HT**  
**BEFORE**  
**Bande PR**

### **DIRECTION FOR USE**

**CLEAN AND ROUGHEN AREA TO BE REPAIRED**  
**A CLEAN SURFACE RESULTS IN A SUCCESSFUL REPAIR**

**PRESSURE SHUT DOWN - AT FIRST START APPLYING A**  
**PLUG OF F.S. STEEL EPOXY OVER THE HOLE**

**UNDER PRESSURE - FOR LEKS WHERE PRESSURE CANNOT**  
**BE REMOVED, FIRST START WITH Ruban RS-HT UNTIL THE**  
**LEAK HAS STOPPED**



1



2



3

- USING GLOWES, REMOVE BANDAGE FROM THE FOIL POUCH
- IMMERSE IN TEMPERATE WATER FOR 20-30 seconds
- WRAP TIGHTLY AND QUICKLY, USING ENTIRE ROLL  
EXTEND APPROX. 8 to 10 cm ABOVE AND BELOW THE  
DAMAGED AREA
- WET GLOVES IN WATER, SQUEEZE AND MOLD  
TAPE IN THE DIRECTION OF THE WRAP, REMOVING  
ANY EXCESS RESIN UNTIL TACKY TO TOUCH (3 min.)
- WAIT 30 min. BEFORE RETURNING TO NORMAL  
OPERATING PRESSURE
- REPAIR, BUILD UP TO A THICKNESS OF APPROX. 10 mm  
(12 CIRCUM) OVER THE LEAK
- HIGHER PRESSURE UP TO 45 Bar CAN BE ACHIEVED BY  
FIRST APPLYING OVER THE LEAK A «PLUG» OF  
F.S. STEEL EPOXY<sup>®</sup>

# **PRESSURE SHUT DOWN** **MECHANICAL REINFORCEMENT**

## ***Bande PR***<sup>®</sup> **- USER CHART -**

**CODE: 1004L = 7.5 cm x 280 cm**      **CODE: 1004XL = 15 cm x 560 cm**

**PIPE DIAMETER / NUMBER OF *Bande PR***

<b>PIPE DIAMETER</b> Ø mm / inch	<b>DIAMETER</b> nominal	<b>NUMBER OF <i>Bande PR-L</i></b> <b>FOR 8 CIRCUM</b>
33,4 / 1"	DN 25	ONE
60,3 / 2"	DN 50	TWO
88,9 / 3"	DN 80	TWO
114,3 / 4"	DN 100	THREE
<b>LARGE DIAMETERS USE <i>Bande PR-XL</i></b>		<b>15cm x 560cm</b>
168,3 / 6"	DN 150	ONE
273,0 / 10"	DN 250	TWO
323,8 / 12"	DN 300	THREE

This table is for guidance purposes only.

### **APPLY**

***F.S.* BEFORE *Bande PR***

**( SEE SHEMA page 12 )**



# **PRESSURE SHUT DOWN** **MECHANICAL REINFORCEMENT**

## **Bande PR<sup>®</sup>**

- 1. START APPLYING A « PLUG » OF F.S. STEEL EPOXY**
- 2. WRAP TIGHTLY *Bande PR* AROUND PIPE**



**1**



**2**

**PIPE Ø 3" - ISOMERAT**

# UNDER PRESSURE

## **Ruban RS-HT<sup>®</sup>**



**Code 5200 : -**  
**L. 200 cm - W. 5 cm - Tick 1.00 mm**  
**under pressure repair up to 7 Bar \***



**Code 4100T :**  
**L. 100 cm - W. 4 cm - Tick 1.50 mm**  
**under pressure repair from 7 to 10 Bar \***

**\* pipe pressure at moment of applying Ruban RS-HT, after covering with Bande PR, repair can withstand up to 45 Bar service pressure**

### DESCRIPTION

**Ruban RS-HT** IS A SELF FUSING TAPE THAT CAN BE USED TO PROVIDE A HIGH TENSION WRAP THAT WILL CREATE AN ENDURING SEAL UNDER EXTREME CONDITIONS

**Ruban RS-HT** IS A NON-TOXIC, EASILY APPLIED, INSTANT REPAIR ABRASION AND TEAR RESISTANT, NEAR TO 0% WATER ABSORBENT, EXCELLENT CHEMICAL RESISTANCE

### TECHNICAL DATA

**SERVICE TEMPERATURE** ..... - 90°C to + 280°C  
**STRETCH TO MAXIMUM** ..... 300%

**SHORE A HARDNES** ..... 50  
**TENSILE STRENGTH** ..... 700 Psi

### DIRECTION FOR USE

**START 4 - 5 cm FROM LEAK AREA**  
**APPLY WITH MAXIMUM STRETCH ON EACH LAYER**  
**WRAP A HALF LAP BEYOND THE PREVIOUS LAYER**  
**CONTINUE WRAPPING UNTIL THE TAPE EXTENDS 4 - 5 cm EACH SIDE OF LEAK AREA**  
**DO NOT CHASE THE LEAK AS EACH WRAP PROVIDES ADDITIONAL PRESSURE OVER THE LEAK**  
**CONTINUE TO WRAP UNTIL THE LEAK HAS STOPPED**



# **YOVANN'S Co.**

## **UNDER PRESSURE**

### **Ruban RS-HT + Bande PR**



**STEAM - 5 Bar - 150°C**

1



**Ruban RS-HT**

2



**Ruban RS-HT**

3



**Ruban RS-HT**

4



**Bande PR**

5



**Bande PR**

6

**Ø2" - STEAM - 5 Bar - 150°C**

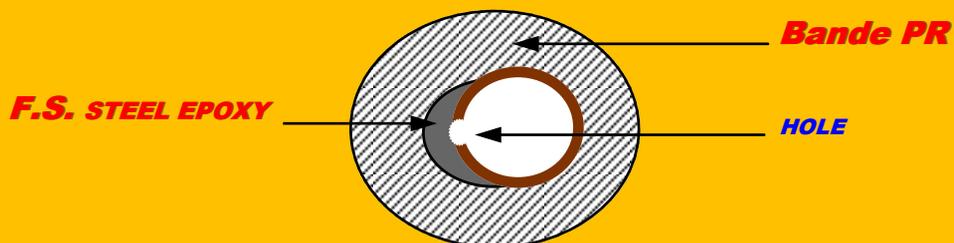
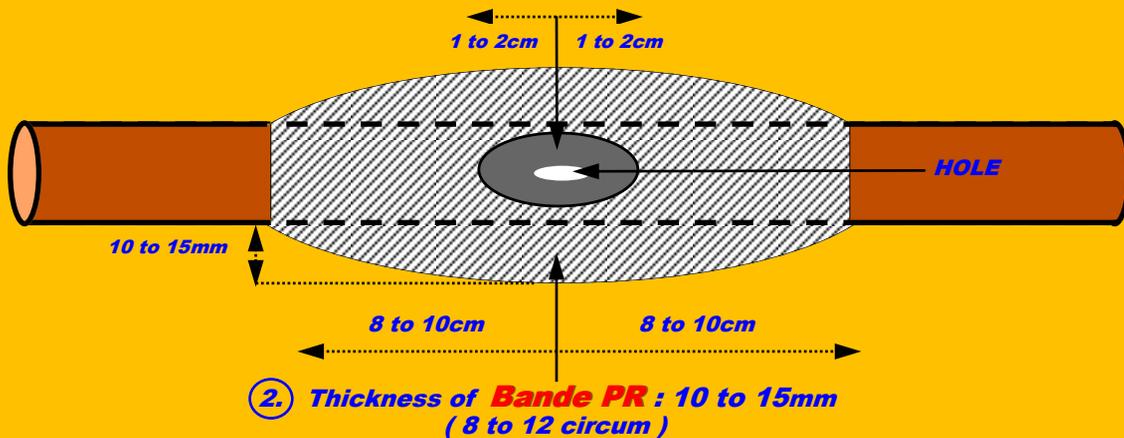
# YOVANN'S Co.

## **FIXING LEAK WITH PRESSURE SHUT DOWN** **GUIDANCE FOR USE SHEMA**

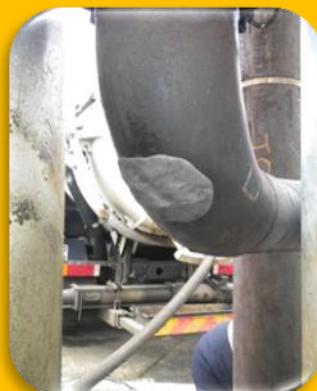
### **START APPLYING** **F.S. STEEL EPOXY BEFORE Bande PR**

① Thickness of **F.S. STEEL EPOXY** : 3 à 5mm

Apply over the hole a « Plug » of **F.S. STEEL EPOXY**  
Press firmly by extending beyond 1 to 2 cm around the hole



**PRESSURE SHUT DOWN**



**1. F.S. STEEL EPOXY**



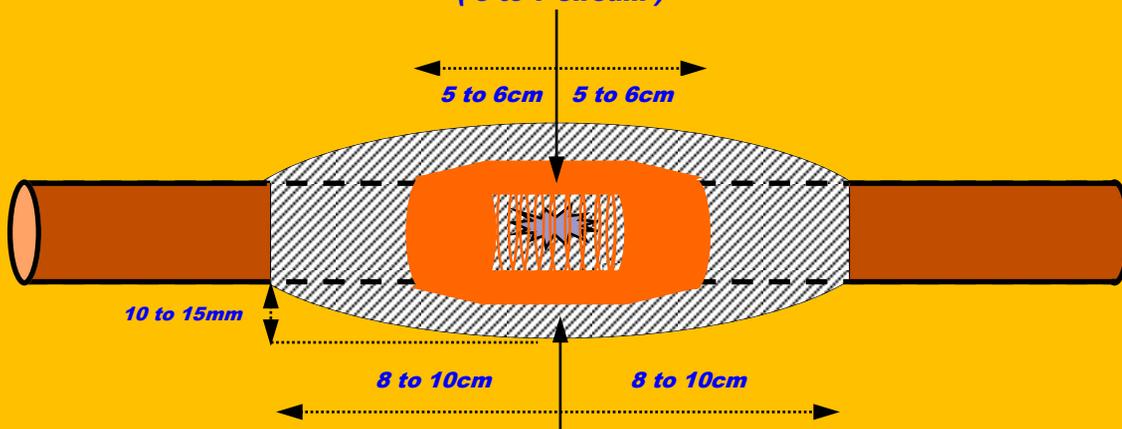
**2. Bande PR**

# YOVANN'S Co.

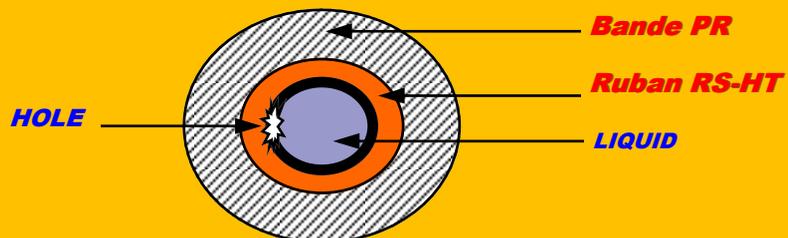
## **FIXING LEAK UNDER PRESSURE GUIDANCE FOR USE SHEMA**

**STOP THE LEAK WITH  
Ruban RS-HT BEFORE Bande PR**  
Maximum pressure 10 Bar at moment of applying

① Thickness of **Ruban RS-HT** : 3 to 5mm  
( 5 to 7 circum )



② Thickness of **Bande PR** : 10 to 15mm  
( 8 to 12 circum )



**Steam 3 Bars**



**1. Ruban RS-HT**



**2. Bande PR**

# ***YOVANN'S Co.***

## **PRESSURE SHUT DOWN**

**MARCH 2015 - TORCH Ø. 4" - 9 Bars - 180°C - HOLE 1" - IMPORTANT CORROSION**



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**JUNE 2015 - REPAIR OF STEAM PIPE FEEDING A TORCH  
Ø. 4" - Pressure 23/30 Bars - Temp. 220/250°C**



# **YOVANN'S Co.**

## **UNDER PRESSURE**

**STEELWORKS GAS - Pressure 140 mg - Ø. 4" - 2 Holes - IN SERVICE SINCE MAY 2013**



### **FEEDBACK OF REPAIR MADE IN 2010**

**LINE DOUBLE ENVELOPE FUEL / STEAM 185° C - Ø 2" - 9.5 Bars**



**INTERVENTION  
FEBRUARY 2010**



**IN SERVICE :  
2011 - 2012 - 2013**



**LEAK APPEARED AFTER 47 MONTHS IN SERVICE  
JANUARY 2014**



**JANUARY 2014 RECOVERING WITH : Ruban RS-HT + Bande PR**



**FEBRUARY 2015**

- **ON SITE APPLICATIONS** -
- **VIDEO DEMONSTRATION** -
- **CHEMICAL COMPATIBILITY** -

*visit our internet site :*

***www.yovannsco.com***

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