



## LECLERC Cahors (46) Conversion from R22 to RS-45 (R434A)

FRAMACOLD thanks the cooling maintenance company AXIMA Refrigeration from Toulouse for their professionalism in the management of this installation to RS-45.

### THE INSTALLATION

#### User:

Leclerc Centre in Cahors (47)

#### Installation:

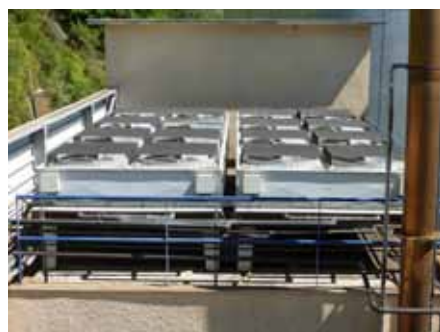
- 2 compressor packs 1996:
- 160 HP positive (4x4 HP COPELAND & HRS)
- Original refrigerant R22: 2 x 500 kg
- Oil: Shell Clavus SD22-12

#### Objective:

Reduce costs driven by the prohibition of R22 while the installation continues to operate without loss of cooling power!



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### TECHNICAL ANSWERS

- Retain the initial facility completely
- Replacement of R22 by RS-45 (R434A)
- Conversion completed in March 2011

#### The only changes were:

- Changing some of the mineral oil with POE
- Opening or replacement of valves (depending on type)

### Benefits of using RS-45 (R434A)

- Minimum cost for the user
- Very little time required
- Minimum reduction of production losses
- No costly investment
- Continuity of the entire plant (compressors, evaporators & condensers)
- Permanent solution as RS-45 (R434A) is an HFC, so allowed after 2015
- In case of leakage, it is not necessary to change all the refrigerant because the glide is very low (1.5°C)



## BENEFITS OF RS-45 (R434A) OVER OTHER ALTERNATIVES

### SPEED & PERFORMANCE & LOW INVESTMENT & SUSTAINABLE

Due to the working pressures of RS-45 (R434A), which are lower than 24 bar, there was no need to change the safety valves and other parts rated to 24 bar which would have been necessary with a change to R404A, R507, R422A or R428A.

Since R434A is compatible with mineral oils, installations using this lubricant do not need to move to a POE, which would have been necessary with R404A, R507, R407C and R427A thereby reducing the conversion time, cost of oil, emergence of new leaks and the constraints imposed by the use of very hygroscopic lubricants.

R434A does not involve any loss of cooling power compared to R22 in contrast to what would happen with R422D, R417A, R424A, R407C and R427A.

Thanks to R434A's low temperature glide of 1.5°C, the system can be directly charged with RS-45. It is not necessary to remove the remaining refrigerant because there is no fractionation of the mixture as would happen with R407C and R427A.

Owing to good condensation achieved, it is not necessary to change the condensers or make any changes in this regard as would be the case with R404A and R507.

The owner can continue to use an A1 safety classification product, thus avoiding toxic chemicals like ammonia which, amongst other things, also requires a major overhaul of their facilities.

