5.3 Refrigerant

Refrigerant

Many of the refrigerants currently used in air conditioning systems cause damage to the ozone layer. The ozone layer protects the earth's surface from damaging radiation. This environmental impact can be reduced by the appropriate selection of refrigerants and fire suppression systems with a zero ozone depletion potential (ODP).

RE-R3 requires that refrigerants and gaseous fire suppression systems installed within the plot have a zero ozone depletion potential.

This would require avoiding refrigerants such as HCFC-22, which even though will not be banned until 2015 within the UAE, it is required that it is not used due to it still having an ODP. Refrigerants with an ODP of zero are required such as HFC-134a.

Table 5.3

Chlorofluorocarbons	ODP	GWP	Common Building Applications
CFC-12	1.0	10,900	Refrigerators, chillers
Hydrochlorofluorocarbons			
HCFC-22	0.055	1,810	Air conditioning, chillers
HCFC-123	0.02	77	CFC-11 replacement
Hydrofluorocarbons			
HFC-134a	0	1,430	CFC-12 or HCFC-22 replacement
HFC-227a	0	3,500	Fire suppression refrigerant
HFC-245fa	0	1,030	Insulation agent, centrifugal chillers
HFC-407c	0	1,700	HCFC-22 replacement
HFC-410a	0	1,900	Air conditioning
HFC-417a	0	1,950	HCFC-22 replacement
Natural Refrigerants			
Carbon Dioxide (CO_2)	0	1.0	
Ammonia (NH_3)	0	0	
Propane (C_3H_8)	0	3	
Isobutene	0	3	
Air	0	0	
Water	0	0	