MECHANICAL COVERSHEET

SPECIFICATIONS & DETAILS

CONDENSATE DRAINS

1. PROVIDE A SUITABLE FIXED CONDENSATE DRAINAGE CONNECTION TO ALL EQUIPMENT THAT IS LIKELY TO PRODUCE CONDENSATE DURING NORMAL OPERATION IN ACCORDANCE WITH THE FOLLOWING INSTALLATION PRINCIPLES:
2. CONDENSATE DRAINS FROM EN ISO 1452-2:2009 PVC PIPE WITH PN10 PRESSURE RATING AND EN ISO 1452-3:2009 SOLVENT WELD FITTINGS
3. PERMANENTLY CONNECT THE CONDENSATE DRAINAGE SYSTEM/S TO THE FOUL OR SURFACE WATER DRAINAGE SYSTEM/S AS PERMITTED UNDER THE APPLICABLE REGULATIONS
4. PROVIDE ADEQUATE BACKFLOW AND ODOR PROTECTION BETWEEN CONDENSATE DRAINAGE AND FOUL OR SURFACE WATER DRAINAGE SYSTEMS
5. PROVIDE CLEAN-OUT ACCESS AT ALL CHANGES OF DIRECTION
6. MAXIMUM LENGTH OF FLEXIBLE HOSE BETWEEN EQUIPMENT DISCHARGE CONNECTION AND FIXED CONDENSATE DRAINAGE SYSTEM IS 0.5M
7. INSULATE CONDENSATE LINES WITHIN BUILDINGS, REFER PIPE INSULATION SCHEDULE
8. PROVIDE UV PROTECTION FOR PVC PIPE THAT IS EXPOSED TO DIRECT SUNLIGHT
9. WHERE CONDENSATE DRAIN PIPEWORK IS CONCEALED WITHIN OR PASSES THROUGH FIRE RATED PARTITIONS, ENSURE THE DESIGN FIRE RESISTANCE IS MAINTAINED
10. INSTALL CONDENSATE DRAINS AT MINIMUM 1.5% (15mm/m) PITCH
11. SUPPORT CONDENSATE DRAINAGE PIPEWORK WITH RUBBER LINED, ZINC PLATED, M10 BOSSED PIPE CLAMPS SUSPENDED ON M10 ZINC PLATED THREADED RODS ANCHORED INTO THE BUILDING STRUCTURE OR HANGING FROM A COMMON SUPPORT CHANNEL
12. ENSURE CONDENSATE DRAINAGE SYSTEM HAS ADEQUATE PROVISIONS FOR AIR ADMITTANCE.
13. MINIMUM CONDENSATE DRAIN LINE SIZES ACCORDING TO NUMBER OF CONNECTED COOLING TERMINALS:

QUANTITY	SIZE
1 Terminal	DN25
2-3 Terminals	DN32
4-5 Terminals	DN40
> 5 Terminals	DN50

PIPE INSULATION SCHEDULE

Service	Material	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN150
LTHW-F LTHW-R	Kingspan Kooltherm FM 37kg/m³ with Bostik T303 tape at joints & seams	15	15	20	20	25	25	30	30	30	35
HWS HWS-R	Kingspan Kooltherm FM 37kg/m³ with Bostik T303 tape at joints & seams	15	15	20	20	25	25				
BCWS	Kingspan Kooltherm FM 37kg/m³ with Bostik T303 tape at joints & seams	15	15	15	15	15	20	20	20	20	20
MCWS	Kingspan Kooltherm FM 37kg/m³ with Bostik T303 tape at joints & seams	15	15	15	15	15	20	20	20	20	20
Condensate	Armacell AF/Armaflex Class O with Armaflex 520 Adhesive	9	9	9	9	9	9				
ACR	Armacell AF/Armaflex Class O with Armaflex 520 Adhesive	Suction & Discharge Lines up to 1/2" - 13mm Suction & Discharge Lines over 1/2" - 19mm									

DUCT INSULATION SCHEDULE

Service	Material	Thickness
Supply Air - AC / HRAP	Kingspan Kooltherm Duct Insulation on Rectangular & Round (>Ø350) Ductwork; Kingspan Kooltherm Pipe Insulation on Round (<Ø350) Ductwork; Bostik T303 tape at joints and seams	25mm
Supply Air - MVHR	Not Insulated, Unless Indicated Otherwise	-
Extract Air	Not Insulated, Unless Indicated Otherwise	-
Outside Air	Kingspan Kooltherm Duct Insulation on Rectangular & Round (>Ø350) Ductwork; Kingspan Kooltherm Pipe Insulation on Round (<Ø350) Ductwork; Bostik T303 tape at joints and seams	25mm
Exhaust Air	Kingspan Kooltherm Duct Insulation on Rectangular & Round (>Ø350) Ductwork; Kingspan Kooltherm Pipe Insulation on Round (<Ø350) Ductwork; Bostik T303 tape at joints and seams	25mm
Facade Plenum Boxes	Kingspan Kooltherm K15 Rainscreen Board	30mm

PIPE SUPPORT SPACING SCHEDULE

Material	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN150
Horizontal Plastic Pipe - Cold Water	0.5m	0.6m	0.8m	0.9m	1.0m	1.2m	1.4m	1.6m	1.8m	2.0m
Vertical Plastic Pipe - Cold Water	0.8m	0.9m	1.2m	1.4m	1.5m	1.8m	2.0m	2.0m	2.0m	2.4m
Horizontal Plastic Pipe - Hot Water	0.5m	0.5m	0.6m	0.7m	0.8m	1.0m	1.2m	1.4m	1.6m	2.0m
Vertical Plastic Pipe - Hot Water	0.8m	0.8m	0.9m	1.0m	1.2m	1.5m	1.8m	2.0m	2.0m	2.4m
Horizontal Metalic Pipe	1.2m	1.2m	1.5m	1.8m	1.8m	1.8m	2.4m	2.4m	2.4m	2.4m
Vertical Metalic Pipe	1.5m	1.5m	1.8m	2.4m	2.4m	3.0m	3.0m	3.0m	3.0m	3.0m
ACR Pipework	3/8-1/2": No greater than 0.8m 5/8-7/8": No greater than 1.2m 1" and above: No greater than 1.5m									

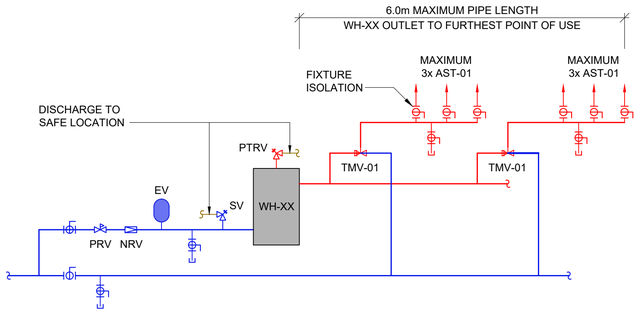
PRE-INSULATED PIPE DATA TABLE

Size	Make	Product Description	Carrier Pipe	Jacket	Min B/Rad
DN25	Uponor	Ecoflex Thermo Twin	(2x) 32/26.2/2.9	140	0.30m
DN32	Uponor	Ecoflex Thermo Twin	(2x) 40/32.6/3.7	175	0.35m
DN40	Uponor	Ecoflex Thermo Twin	(2x) 50/40.8/4.6	175	0.45m
DN50	Uponor	Ecoflex Thermo Twin	(2x) 63/51.4/5.8	175	0.55m
DN65	Uponor	Ecoflex Thermo Twin	(2x) 75/61.4/6.8	200	0.80m
DN80	Uponor	Ecoflex Thermo Single	90/73.6/8.2	200	1.10m
DN100	Uponor	Ecoflex Thermo Single	110/90.0/10.0	200	1.20m
DN125	Uponor	Ecoflex Thermo Single	125/102.2/11.4	250	1.40m

PIPE SIZE TABLE

Size	Diameter
DN15	15mm
DN20	22mm
DN25	28mm
DN32	35mm
DN40	42mm
DN50	54mm
DN65	76mm
DN80	89mm
DN100	108mm

TYPICAL DETAILS



UNVENTED CYLINDER KIT COMPONENTS

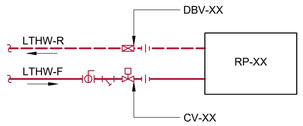
SYMBOL	DESCRIPTION
PRV	Pressure Reducing Valve
NRV	Non-Return Valve
EV	Expansion Vessel
SV	Safety Valve
PTRV	Pressure Temperature Relief Valve

PIPE SIZE DATA

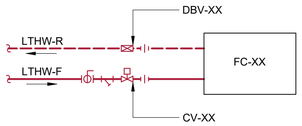
SIZE	FIXTURES
DN15	1-2 Fixtures
DN20	3-5 Fixtures
DN25	6-10 Fixtures

NOTE: PURCHASE UNVENTED CYLINDER KIT FROM MANUFACTURER IF AVAILABLE, IF NOT REQUEST DESIGN INPUT

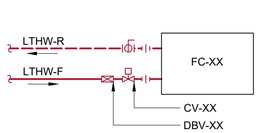
UNVENTED ELECTRIC WATER HEATER ARRANGEMENT



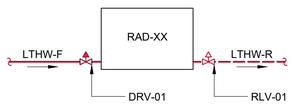
RADIANT PANEL CONNECTION



HYDRONIC CASSETTE CONNECTION
VALVE INSTALLATION ABOVE CEILING



FAN CONVECTOR CONNECTION
VALVE INSTALLATION WITHIN CASING



RADIATOR CONNECTION

Rev	Description	Date
T00	For Tender	23/10/30

Client

Site

Project

Construction & Engineering Services Ltd

www.pandaces.co.uk
T: 01908 991130

Drawing Title
Specifications & Details

Drawing Ref
02-15 M-CS-02

Revision	Date
T00	2023/10/30

Scale	Status
NTS	For Tender