Walk-In Chamber

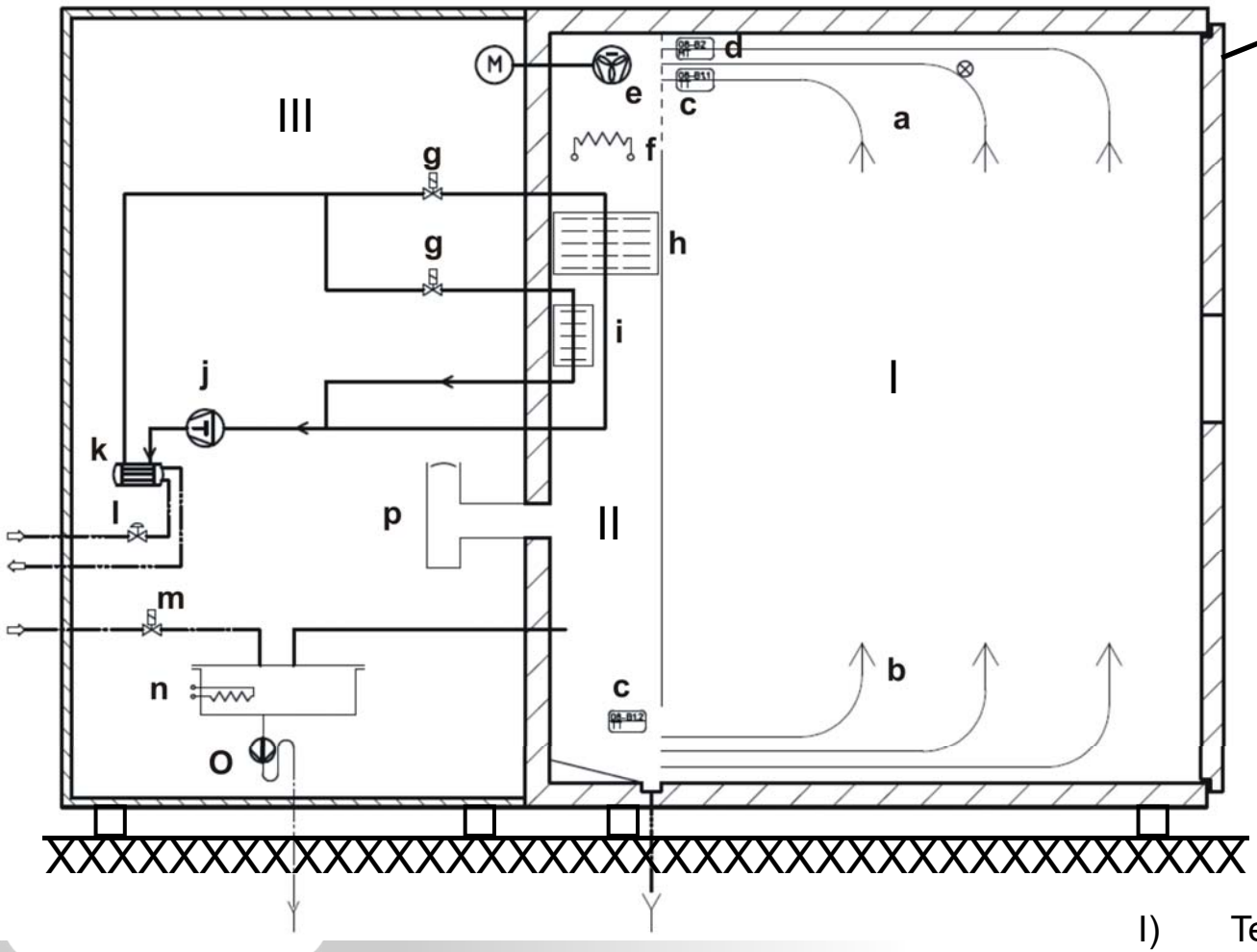
CLIMA
TEMPERATUR
SYSTEME
CTS

What is important to know about

Walk – In – chambers?

Construction of the cabinets

View from the side

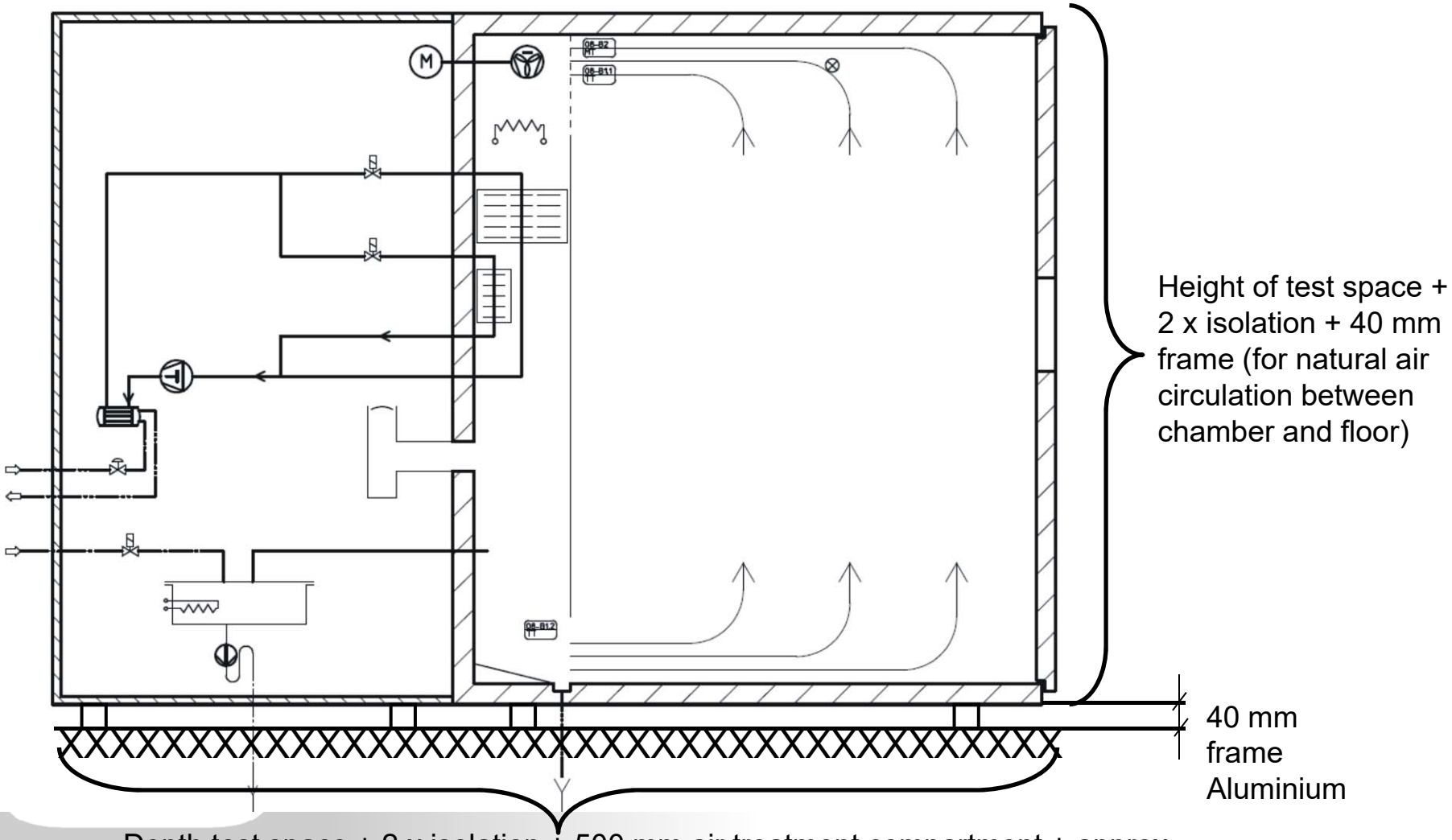


a) air outlet from test space
b) air inlet to test specimen
c) temperature sensor
d) humidity sensor
e) ventilator
f) heating
g) valves for regulation
h) evaporator
i) heat exchanger
j) compressor
k) condenser
l) control for cooling water
m)water replenishment
n) steam generator
o) pump to clarify
p) pressure equalizer

I) Test space
II) Air treatment compartment
III) Machine unit

External dimensions of a chamber

View from the side



Different isolation in different temperature ranges

+180°C to -70°C	→ isolation 170 mm
+120°C to -70°C	→ **isolation 140 mm**
< +100°C to -20°C	→ isolation 100 mm

External dimensions of a chamber

Example for the dimensions:

Calculation of the external dimensions:

Test space:	1500 x 1200 x 2200 mm (w x d x h)
Temperature range:	-60°C to +120°C → 140mm Isolation

- **width**: 1500mm + 2 x 140mm isolation = 1780mm → 1800mm
- **depth**: 1200mm + 2 x 140mm isolation + 500mm air treatment compartment + approx. 1500mm machine unit = 3480mm → 3500mm
- **height:** 2200mm + 2 x 140mm isolation + 40mm frame for natural air circulation = 2520mm → 2550mm

Possible designs of a chamber

The machine unit and the control unit is separated from the housing of the chamber

Please note: you have to organise and calculate the assembly and setting into operation and installation of the machine unit and control unit

Compact design

The machine unit and the control unit is included in the housing of the chamber

→Please check dimensions for entrance

Different connections between the panels of a chamber

When must be the isolation elements welded or not welded?

Connection of the panels without welding: **dew point < 69°C**

Example:	Temperature	70°C
	Humidity	95% r.h.

} Dew point 68,8°C

Connection of panels are vapour tight welded : dew point > 69°C

Example:	Temperature	80°C
	Humidity	70% r.h.

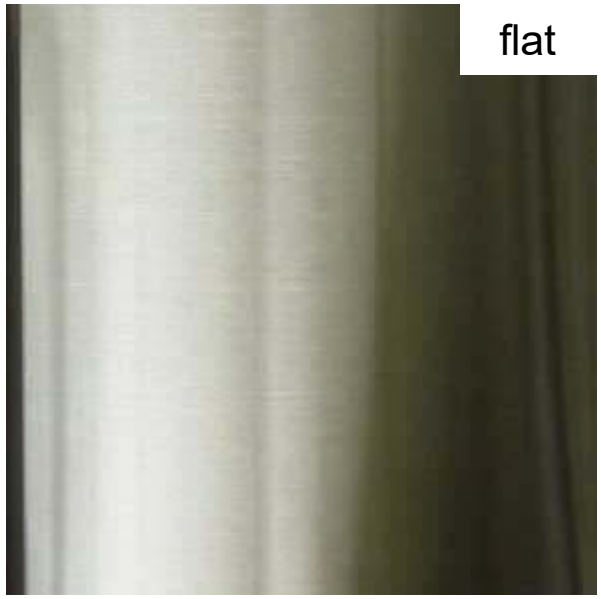
} Dew point 71,4°C

→ Necessary to weld because the vapour pressure is too big from inside the chamber → humidity can enter into the isolation

Floor material

grinded

flat



Bulb plate

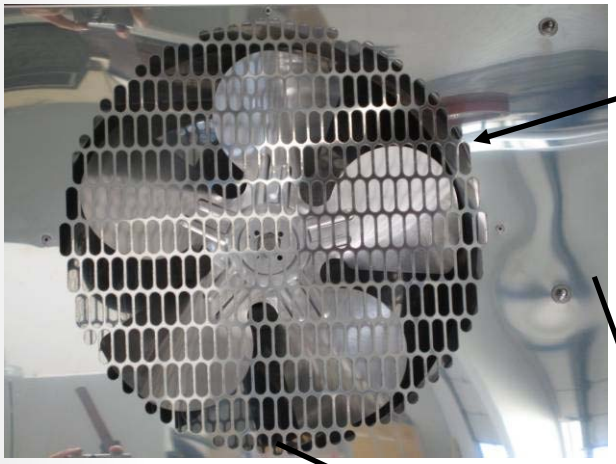
checker

Important to know..

Pressure equalizer, for breathing of the chamber

Window is necessary for safety rules

The grate in front of a ventilator



For safety, only small holes

Emergency switch is necessary for safety rules

Door design

< 1500mm we can use a single wing door

≥ 1500mm we need a double wing door

18 m³ Test-Space capacity

Chamber for Solar-industry

3 m^3 Test-Space capacity

CLIMA
TEMPERATUR
SYSTEME
CTS

compact design

machine - department

Air bag – Test

70 m^3 test-space capacity

Airbag

Test - Chamber

Air bag – Test
inside the test chamber

Loading for transportation