Transair: Advanced Air Pipe Systems

Air Quality Standards

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

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ENGINEERING YOUR SUCCESS.

The International Standards for Compressed Air Quality

The most common ISO standards used for compressed air quality are:

ISO8573 Series: the most commonly used standard and in particular ISO8573-1:2010, which is used to specify the purity of air required at a particular point of use.

ISO12500 Series: used to verify performance of filters.

ISO7183 Series: used to verify performance of dryers.

ISO8573-1 is the primary document used from the **ISO8573 series**, as it is this document which specifies the amount of contamination allowed in each cubic meter of compressed air.

ISO8573-1 lists the main contaminants as solid particulate, water and oil. The purity levels for each contaminant are shown separately, however for ease of use, this document combines all three contaminants into one easy to use table.

ISO8573-1:2010 CLASS	Solid Particulate				Water		Oil
	Maximum number of particles per m^3			Mass Concentration mg/ m^3	Vapour Pressure Dewpoint	Liquid g/m^3	Total Oil (aerosol liquid and vapour)
	0.1 – 0.5 µm	0.5 – 1 µm	1 – 5 µm				mg/ m^3
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	≤ 20,000	≤ 400	≤ 10	-	≤ - 70°C	-	0.01
2	≤ 400,000	≤ 6,000	≤ 100	-	≤ - 40°C	-	0.1
3	-	≤ 90,000	≤ 1,000	-	≤ - 20°C	-	1
4	-	-	≤ 10,000	-	≤ +3°C	-	5
5	-	-	≤ 100,000	-	≤ +7°C	-	-
6	-	-	-	≤ 5	≤ +10°C	-	-
7	-	-	-	5-10	-	≤ 0.5	-
8	-	-	-	-	-	0.5 - 5	-
9	-	-	-	-	-	5 - 10	-
X	-	-	-	> 10	-	> 10	> 10

ISO8573-1:2010 Class zero

- Class 0 does not mean zero contamination
- Class 0 requires the user and the equipment manufacturer to agree on contamination levels as part of a written specification
- The agreed contamination levels for a Class 0 specification should be within the measurement capabilities of the test equipment and test methods shown in ISO8573 Pt 2 to Pt 9
- The agreed Class 0 specification must be written on all documentation to be in accordance with the standard
- Stating Class 0 without the agreed specification is meaningless and not in accordance with the standard
- A number of compressor manufacturers claim that the delivered air from their oil-free compressors is in compliance with Class 0
    - If the compressor was tested in clean room conditions, the contamination detected at the outlet will be minimal. Should the same compressor now be installed in typical urban environment, the level of contamination will be dependent upon what is drawn into the compressor intake, rendering the Class 0 claim invalid
    - A compressor delivering air to Class 0 will still require purification equipment in both the compressor room and at the point of use for the Class 0 purity to be maintained at the application
- Purification of air to meet a Class 0 specification is only cost effective if carried out at the point of use

Specifying air purity in accordance with ISO8573-1:2010

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contaminant if required). An example of how to write an air quality specification is shown below:

ISO 8573-1:2010 Class 1.2.1

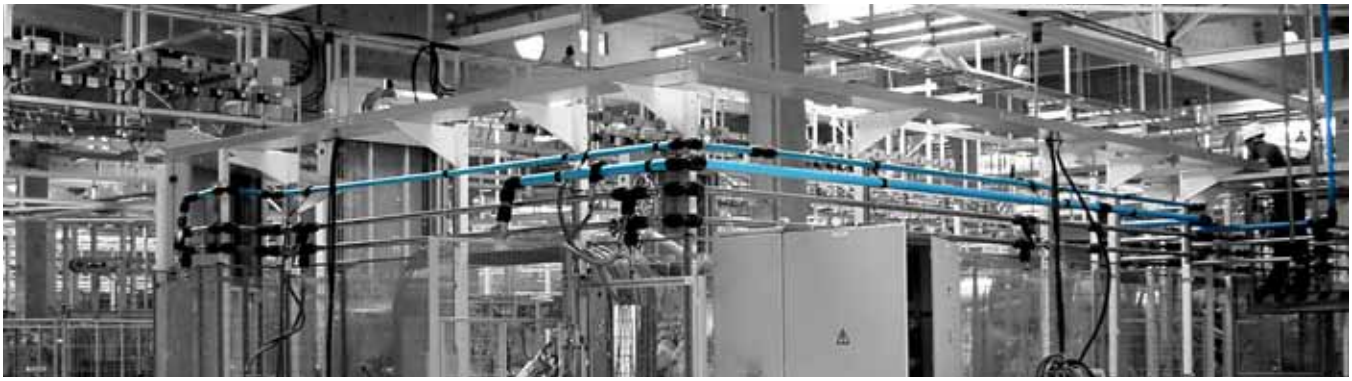
ISO 8573-1:2010 refers to the standard document and its revision, the three digits refer to the purity classifications selected for solid particulate, water and total oil. Selecting a air purity class of 1.2.1 would specify the following air quality when operating at the standard's reference conditions:

Class 1 Particulate
In each cubic metre of compressed air, the particulate count should not exceed 20,000 particles in the 0.1 - 0.5 micron size range, 400 particles in the 0.5 - 1 micron size range and 10 particles in the 1 - 5 micron size range.

Class 2 Water
A pressure dew point (PDP) of -40°C or better is required and no liquid water is allowed.

Class 1 Oil
In each cubic metre of compressed air, not more than 0.01mg of oil is allowed. This is a total level for liquid oil, oil aerosol and oil vapour.

Transair Capabilities on Air Quality



ISO8573-1:2010 CLASS	Solid Particulate				Water		Oil
	Maximum number of particles per m^3			Mass Concentration mg/ m^3	Vapour Pressure Dewpoint	Liquid g/m^3	Total Oil (aerosol liquid and vapour)
	0.1 – 0.5 µm	0.5 – 1 µm	1 – 5 µm				mg/ m^3
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	OK*	OK*	OK*	-	OK**	-	OK
2	OK	OK	OK	-	OK	-	OK
3	-	OK	OK	-	OK	-	OK
4	-	-	OK	-	OK	-	OK
5	-	-	OK	-	OK	-	-
6	-	-	-	OK	OK	-	-
7	-	-	-	OK	-	OK	-
8	-	-	-	-	-	OK	-
9	-	-	-	-	-	OK	-
X	-	-	-	OK	-	OK	OK

* Transair in line with standard after one purge

** Transair in line with standard depending on the atmospheric conditions

> Reminder

1. Purification equipment is installed to provide air quality and you must first of all identify the quality of compressed air required for your system. Each usage point in the system may require a different quality of compressed air dependent upon the application. Using the quality classifications shown in ISO8573-1:2010 will assist your equipment supplier to quickly and easily select the correct purification equipment necessary for each part of the system.

2. ISO8573-1:2010 is the latest edition of the standard. Ensure it is written in full when contacting suppliers. Specifying air quality as ISO8573-1, ISO8573-1:1991 or ISO8573-1:2001 refers to the previous editions of the standard and may result in a different quality of delivered compressed air.

3. Ensure that the equipment under consideration will actually provide delivered air quality in accordance with the quality classifications you have selected from ISO8573-1:2010.

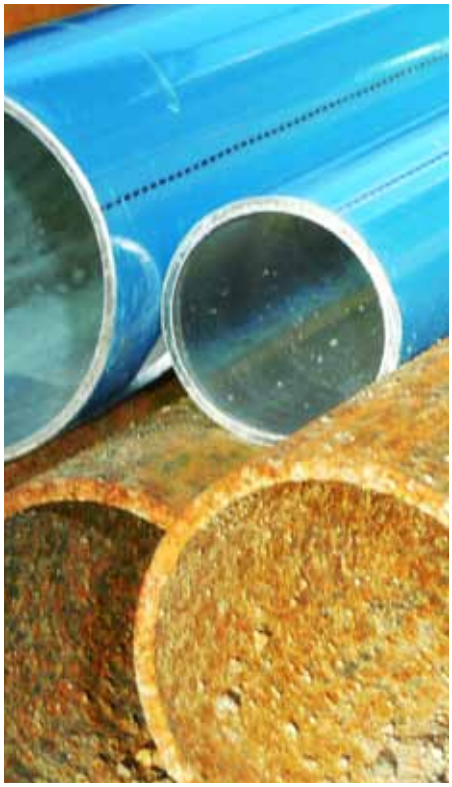
4. A Transair piping system cannot replace purification devices, Transair only maintains the quality of air delivered by separators, filters and dryers.

5. Ask for independent validation of product performance by a third party.

6. For a complete study of your purification system we advise you consult each manufacturer directly.

7. The installation must include only Transair products.

8. The installation must comply with Parker Legris Transair instructions and recommendations.



Transair: Advanced Pipe Systems

Aluminum range:

Calibrated aluminium pipes
Qualicoat powder coating

Diameters (mm)
16.5 - 25 - 40 - 63 - 76 - 100 -168

Colors
Available in blue - grey - green
Other colors upon request

Maximum working pressure
232* psi from -4°F to +115°F
*Max. working pressure for 6" is 188 psi

Working temperature
from -4°F to +140°F

Vacuum level
98.7 % (29.6" Hg)

Suitable fluids
Lubricated or oil-free compressed air, industrial vacuum, inert gases

Stainless steel range:

Stainless steel pipes
304L

Diameters (in)
1/2 - 3/4 - 1 1/2 - 2 - 3 - 4

Maximum working pressure
1/2 - 3/4": 145 psi from -4°F to +185°F
1 1/2 - 4": 145 psi from -4°F to +140°F

Working temperature
1/2 - 3/4": from -4°F to +185°F
1 1/2 - 4": from -4°F to +140°F

Water hammer
1/2 - 3/4": comply with norm BS.7291 part 1
1 1/2 - 4": comply with norm NF T54-094

Suitable fluids
Cooling water, industrial water with additives, lubricating oil, compressed air, inert gases

Certifications and Guarantees

TÜVRheinland ASME ISO8573 AFAQ ISO 9001 VERSION 2000 QUALICOAT 10 YEARS GUARANTEE 10 YEARS

Transair: Tools and Services

Transair Flow Calculator

- defines the recommended diameter for your project
- estimates your pressure drops
- gives the maximum flow rate by diameter

Transair Energy Efficiency Calculator

evaluates the energy cost of your system and return on investment of a Transair solution.

Transair Value Calculator

illustrates the typical savings achieved by installing Transair in place of traditional steel or copper pipe system.

CAD Drawings

gives you access to view or download Transair CAD drawings in 2D or 3D.

Website: www.parkertransair.com

gives you access to extensive information about the Transair solution, technical data, examples of existing systems and a download center for catalogs, manuals, software and brochures.

Quotation Service

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provides you a detailed quotation and drawing for an installed Transair system.

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