**Appendix 1: Mass of compressed air per unit volume**

It is well known that the temperature of air given an altitude below 11.0 Kilometer is given by

|  |  |
| --- | --- |
|  | (A1) |

where is the altitude and is 288.15K.

And the atmospheric pressure is given by

|  |  |
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|  | (A2) |

where is 101,325N/m2.

Then the air density is

|  |  |
| --- | --- |
|  | (A3) |

where R is a constant value, which is 287.1.

Since the

|  |  |
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|  | (A4) |

The mass of compressed air per unit volume can be obtained with the

|  |  |
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|  | (A5) |