

Technical specification for weather balloons for radiosonde network		
	Version nr.: 0.2	Rev. date: 14.12.2017
Approved	Author: Kjetil Stiansen/Terje Borge	Page: 1 of 6



**Meteorologisk  
institutt**

### **Technical specifications for Weather balloons**

This document describes the technical requirements and desired performance for the balloons to the Norwegian Radiosonde Network. It also states the yearly demand and delivery criteria.

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## 1. Introduction

The Norwegian Meteorological Institute (MET Norway) is the government agency responsible for providing meteorological data and other weather related services in Norway. The Institute has been operating radiosondes systems since 1949. The present launch sites are at Blindern, Andøya, Sola, Ørland, Ekofisk, Jan Mayen and Bjørnøya.

This specification includes the technical function and quality / performance requirements for balloons to the Norwegian radiosondes network. It also states the yearly amount of balloons needed for all stations.

## 2. Yearly amount, delivery and pricing

### 2.1 Yearly amount

The stations use 200 gram and 350 gram balloons. The yearly amount of 200 grams balloons is appr. 750 pieces. The yearly amount of 350 gram balloons is appr. 4850 pieces in total. There may also be extra requirements for up to 500 balloons, due to special campaigns.

Ekofisk: 750pcs of 200 gram balloons

Bjørnøya: 1200pcs of 350 gram balloons

Jan Mayen: 1200pcs of 350 gram balloons

Andøya: 750 pcs of 350 gram balloons

Sola: 750 pcs of 350 gram balloons

Ørland: 750 pcs of 350 gram balloons

Blindern: launch on demand, 200 pcs of 350 gram balloons

All numbers are estimates based on a normal annual schedule, and can be changed if necessary.

### 2.2 Delivery criteria

All balloons shall be delivered by the end of May every year for the contract period. Delivery time for additional orders shall be stated.

The delivery addresses are:

#### **Ekofisk:**

ConocoPhillips

L-WHSE

Ekofiskveien 35

N-4056 TANAGER

Attn.: Jim Langeland, phone +47 5202207

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**Bjørnøya:**

BJØRNØYA RS-STASJON  
 c/o NOR-EXPRESS AS  
 Havnegata 7  
 N-8400 SORTLAND  
 Attn: Sylvi Adolfsen, phone +47 76128473

**Andøya Autosonde**

Andøya Space Center AS  
 Bleiksveien 46,  
 N-8480 ANDENES  
 Attn: Ingrid Hanssen, phone +47 47601904

**Jan Mayen:**

JAN MAYEN RS-STASJON  
 c/o FN/NATO Transitterminal  
 Gardermoen Flystasjon  
 Flystasjonsveien 1  
 N-2060 GARDERMOEN  
 Attn: Bjørnar Klevgård, phone +47 64803580  
 (This address may be changed, as balloons may be delivered by boat instead)

**Sola Autosonde**

Sandnesveien 62  
 N-4050 SOLA  
 Attn: Kjell Lea, phone +47 90069126

**Ørland Autosonde**

Ørland Hovedflystasjon  
 Bygg 44 Radiosonde  
 N-7130 BREKSTAD  
 Attn: Oddvar Jenssen, phone +47 91193396

**Alternativt:**

Oddvar Jenssen (Ørland RS)  
 Furunesveien 281  
 NO-7160 BJUGN

**Blindern:**

Meteorologisk Institutt  
 Henrik Mohns plass 1  
 N-0313 OSLO  
 Attn: Terje Borge, phone +47 48146578

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The shipments and customs papers for Jan Mayen, Bjørnøya, and Ekofisk shall be marked with “forpassing / goods in transit” to avoid VAT.

### ***2.3 Unit price***

The unit price shall be stated. In addition, quantity discounts and other conditions relating to the price offered shall be clearly stated.

## **3 Physical Requirements**

### ***3.1 Common requirements***

Common requirements for both 200 and 350 grams balloons:

- The neck of the balloons must have an inner diameter of 3,0 cm and be at least 10 cm long.
- When inflated, the shape of the balloons must be round.
- Ascent rate: Appr. 300 m/min.
- Payload: 140 grams.

### ***3.2 Requirements for the 200 grams balloons***

The 200 grams balloons will mainly be used with helium and should perform as described:

- Free lift: 360 gr
- Gross lift: 700 gr
- Diameter at release: 110 cm
- Volume at release: 0,7 m<sup>3</sup>
- Bursting altitude: At least 22 km

### ***3.3 Requirement for the 350 grams balloons***

The 350 grams balloons will mainly be used with hydrogen and should perform as described:

- Free lift: 400 gr
- Gross lift: 890 gr
- Diameter at release: 115 cm
- Volume at release: 0,8 m<sup>3</sup>
- Bursting altitude: At least 27,5 km

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#### **4. Ambient environment considerations**

The balloons must be able to operate under wide variations in wind and temperature. Temperature range that the balloons can be exposed to may vary from -25 to +35 degrees Celsius.

If any special prelaunch treatments, e.g. heating, are necessary when the outside temperature is low, the tenderer must specify this.

#### **5. Documentation**

In the following is stated what kind of documentation / manuals supplier must provide. All documentation must be submitted in English. The documentation must be submitted in digital form and as hard copy. 8 copies of the documentation are needed.

##### ***5.1 Use***

Supplier must provide a simple guidance on proper use of the balloons.

##### ***5.2 Manuals for handling and storage***

Supplier must provide documentation on correct handling and storage of the balloons.

##### ***5.3 Performance and reliability***

Supplier must also provide documentation of balloon performance in Nordic conditions.

The supplier shall send 10pcs of each balloon type offered, for testing.

Use the Blindern address for this.

Any other information the tenderer thinks are of importance may also be stated here.

##### ***5.4 Supplier references***

The supplier shall list at least three references that currently use their balloons.