Scientific Research Institute of Sanitary Engineering JSC
Santekhoborudovanie Testing Center
Test laboratory for radial and axial fans testing
21 Lokomotivnyi proezd, Moscow, 127238

Accreditation Certificate No. 0000683 ROSS RU. 0001. 21MX07,
issued by the Federal Service for Accreditation (ROSACCREDITATION)
November 20, 2014

Head of
Santekhoborudovanie Testing Center
Signature Yu.V. Vikhrov

TEST PROTOCOL No. 024/12-2019

1. **Axial mine booster fan VME-6.**
   Serial No. 98, production year - 2019
   (product name, type, brand mark, model, serial number, production date)
2. **Glazovsky Zavod Metallist JSC**
   10 Iukamenskaia Str., Glazov, 427627
   (manufacturer, address)
3. **Glazovsky Zavod Metallist JSC**
   10 Yukamenskaja Str., Glazov, 427627
   (applicant enterprise, address)
   Definitive aerodynamic tests.
   GOST 10921-2017, GOST 10616-2015.
   (type of tests, name and Regulatory Document reference upon which the tests were carried out)
4. Addendum No. 1 of December 19, 2019 to Contract No. 54 si of November 18, 2019.
   (date and number of the contract or application)

The tests have been carried out from December 24, 2019 to December 27, 2019.

Test results: in 2-5 pages.

The test laboratory of radial and axial fans of SRI of Sanitary Engineering JSC from December 24, 2019 to December 27, 2019 had been carrying out the definitive aerodynamic tests of the axial mine booster fan VME-6, serial No. 98, production year 2019.

The tests were carried out in accordance with the requirements of the current Standards and Technical Documentation: - GOST 10921-2017, GOST 10616-2015

As a result of the tests, the following has been established:

SECTION 1. CHARACTERISTICS OF THE TESTED PRODUCT

Test item: Axial mine booster fan VME-6.

Manufacturer: Glazovsky Zavod Metallist JSC

10 Yukamenskaja Str., Glazov, 427627

SECTION 2. Test conditions

Relative humidity, % - 52
Air density, kg / m^3-1.2
Collector L=0.352 m, C=0.982
Temperature - 21 °C
Atmospheric pressure - 735 mmHg.

SECTION 3. Measuring means

3.1. List of measuring means used for testing is given in Appendix 1.

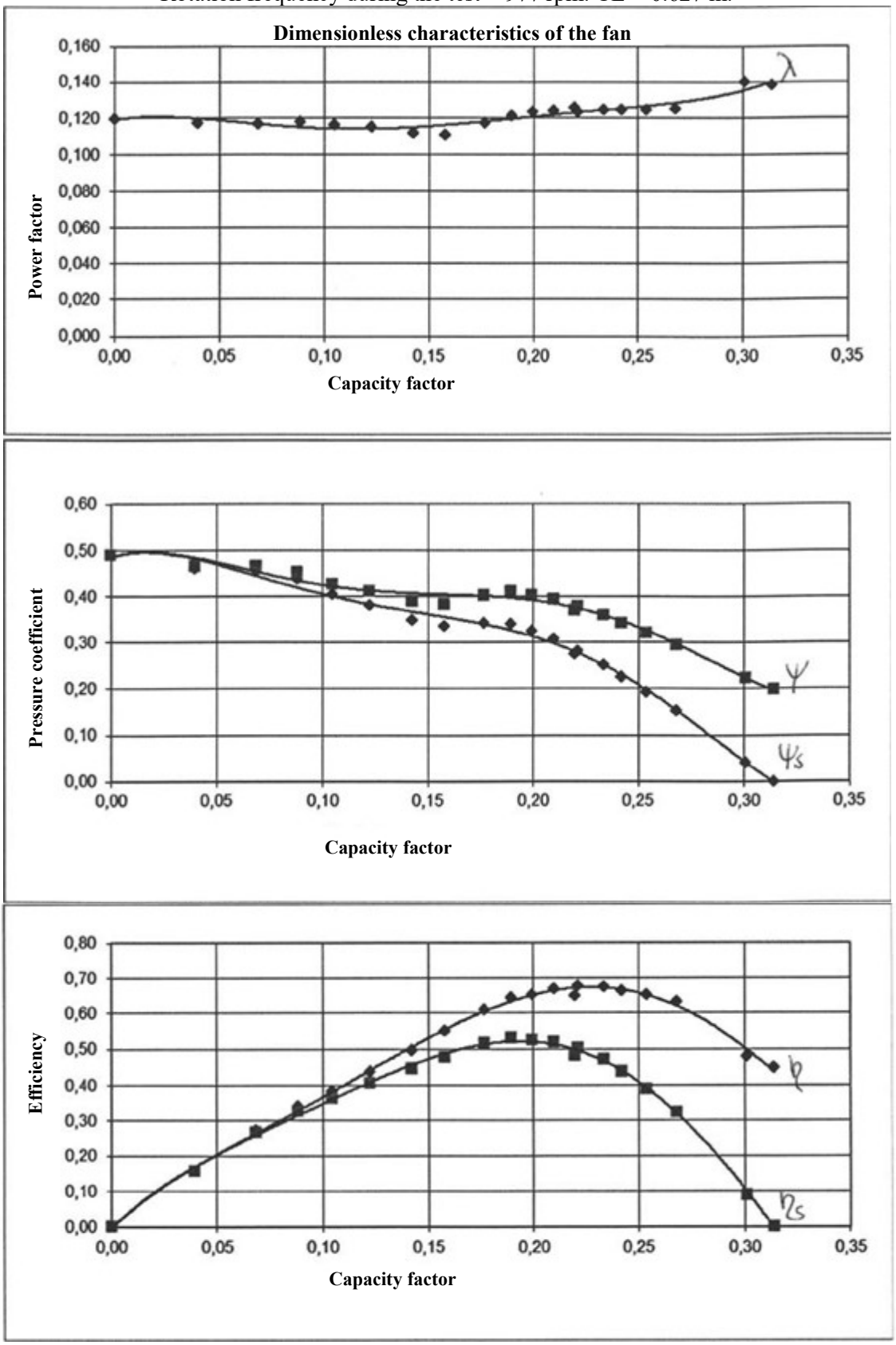
Appendix 1
to the Protocol №024/12-2019
of December 27, 2019

Item No.	Name and type of MM, equipment	Serial number	Measuring range	Date of verification, certification, verification period
1.	Aerodynamic test facility	w/o No.	Q=0.1-5.0 m^3 / s	July 29, 2019 2 years
2.	Liquid multirange micrometer MMN-2400	5429 5574	0-2400 mm w.g.	August 16, 2019 1 year
3.	Aneroid barometer	10947	0.5-280 kPa	August 16, 2019 1 year
4.	Electronic tachometer Testo 465	0511515	0-9999 rpm	August 12, 2019 1 year
5.	The 4-th class weights - G-4-1110	4361	1-2000 g	August 20, 2019. 1 year

SECTION 4. Test results

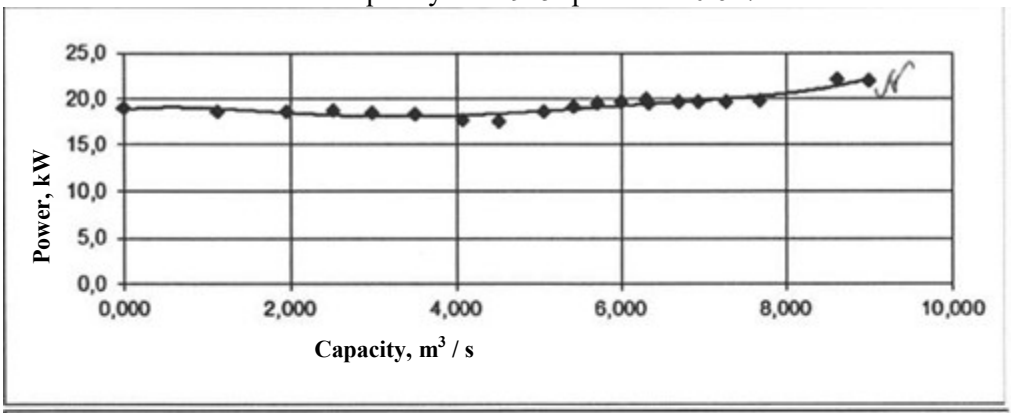
1. The test results are shown as dependency diagrams of total Pv and static Ps pressures developed by the fan, the power consumption N, total **η** and static **η** $_s$ efficiency from Q capacity at a constant speed n of its impeller, as well as the dependences of the dimensionless coefficients of the total ψ and static ψ_s pressures, the power factor λ, the total η and static η_s efficiency from the capacity factor φ.
2. The obtained characteristics of total Pv pressure and maximum efficiency **correspond** to the data given in the passport.

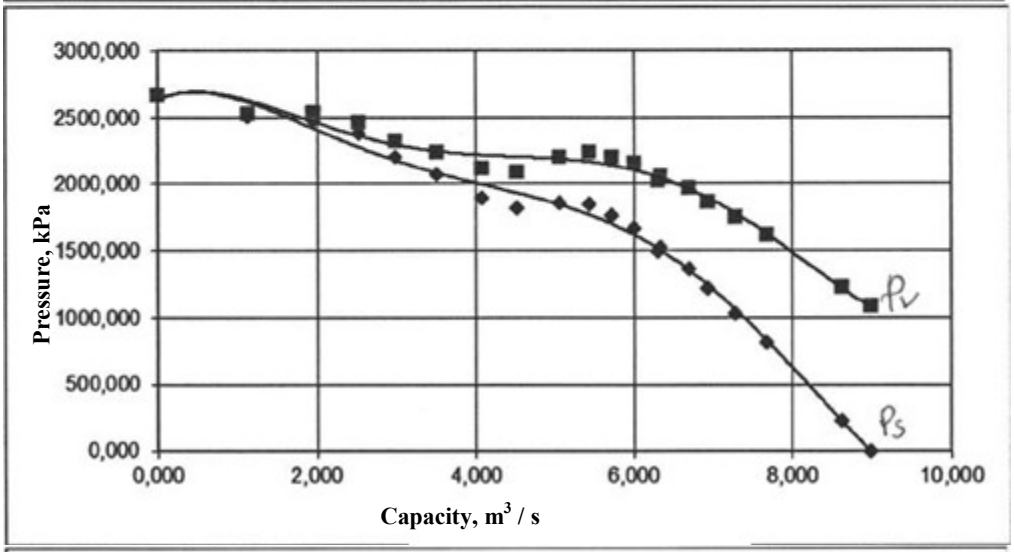
Dimensionless aerodynamic parameters of the axial mine VME-6
Rotation frequency during the test = 977 rpm. CL = 0.627 m.

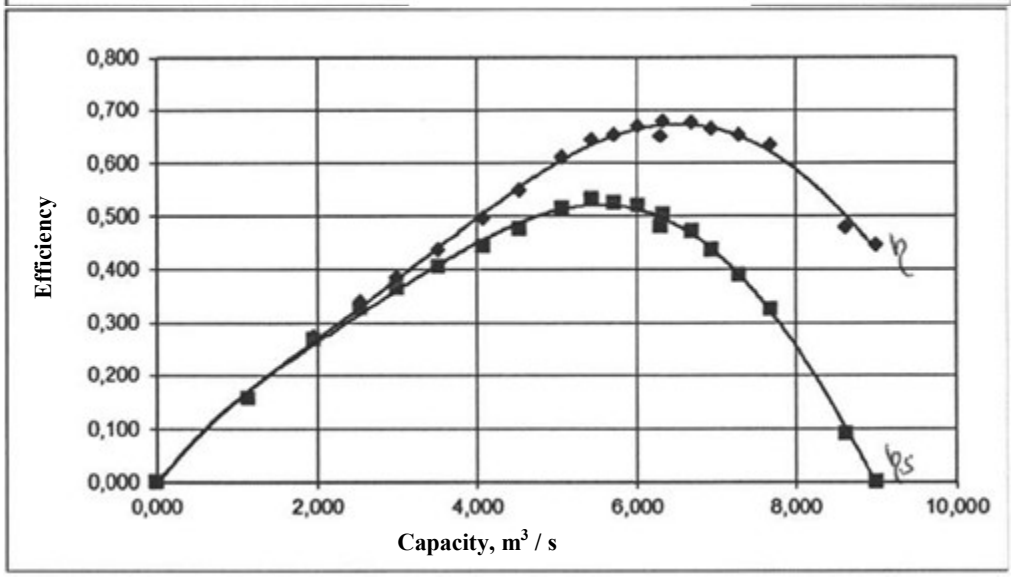


φ-capacity factor,
ψ, ψs - coefficients of total and static pressure,
η, ηs - total and static efficiency,
λ – power factor,

Dimensional aerodynamic parameters of the axial mine VME-6
Rotation frequency n = 2945 rpm. CL = 0.627 m.







n - overall efficiency
ηs - static efficiency,
Pv-total pressure, Pa
Ps-static pressure, Pa
Q-air capacity, m3 / s
N-power, kW

The tests have been carried out by:
Head of the test laboratory of
radial and axial fans *Signature* ***A. G. Kharchenko***