1. The possibility of preparation of the emulsion with the required stability on the basis of spent oily products and solutions, technical detergents, using shock waves encountered when using pneumatic radiator has been proved.

2. The optimum water content in the emulsion, allowing obtaining an emulsion with sufficient stability for its industrial use has been specified.

3. It has been deduced from the experiments that the optimal time of the pneumatic transducer is 15 minutes. Further increase in the time of the radiator has no appreciable effect on the stability of the emulsion.

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USING OF THE TEXTILE VENTILATING DUCTS IN ROOMS WITH STRICT SANITARY AND HYGIENIC REQUIREMENTS

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At the present time new large-volume housebuilding gains breadth. Innovative technologies and materials are applying with the high rate of the building proposes. Such applications reduce the set-up duration of civil works and building services systems reduce capital and operating costs. Modern buildings (such as sport complexes and hypermarkets, food industry shops etc.) are made from hi-tech materials (sandwich constructions, lightweight-aggregate concrete, proflists and so on), which maintain the temperature, but have a low thermal inertia. Microclimate of those rooms demands regular monitoring and, as a result, high indicators of its parameters.

In the majority of cases temperature conditions are created by the heating systems. Air conditions in public and industrial buildings are improved thanks for using of ventilation and air conditioning systems. Also the microclimate, which satisfies technologic, sanitary and hygienic requirements, can be maintained. The main requirements put on the [1] and [2].

Besides, during the ventilation and air conditioning projecting you should follow next main principles [3]:

– Excess the air-in volume over exhaust air volume 10…15%;
– Handling air to zones with the least noxiousness exhalation and its expulsion from places with the maximal pollution;
– Absence of subcooling or overwarming;
– Pollution air outlets only in ventilated surrounding areas;
– Noise content and vibration are compliance during the work of ventilation systems;
– Installation simplicity and reliability in service; fire safety and flameproof.

The system projecting can be made in the form of traditional version and innovation version. Traditionally, hot-water heating with steel pipes and radiators/convection heaters and sheet metal ducts with louvres for ventilation proposed to be used. However, these systems not always can provide required parameters of microclimate for large-volume buildings [4].

More and more systems both traditional and modern are spreading. Using of the air heating in coincidence with ventilation becomes the main scheme for those buildings. The air-traffic management, its meaning and appliance of recirculating are main characteristics of such systems. Large volumes of air handling with small rates, temperature distribution in large-volume buildings are an intricate task. Textile ventilating ducts cope with this task [5].

Textile ventilating ducts recently enter the market and nowadays occupy a separate niche at the ventilation equipment market. Fundamentally, they used only in food industry. Areas of textile ventilating ducts applicability are widely: sport and mercantile establishments, spectating pavilions, stocks with low temperatures, textile and chemical industry and so on. Important fact that such constructions are easily dismantled for cleaning and bacterial purification.

Synthetic fabric for textile ventilating ducts has special weaving, which reduces walls roughness. In result, grid flow resistance and fabric lint subtraction to room are decreasing. Textile ventilating ducts not filters, but during the process of their pollution it can be washed (what is impossible for sheet metal ducts). Depending on material quality the guarantee make up about 10-50 washing cycles. For interval increasing between ventilating ducts cleanings is recommended to use roughing rotary type filters and big square filters (for example, sack filter), which able to collect large volumes of dust. For rooms with strict flameproof requirements bring into use sheet with flammability classification G1.

Thanks to fabric structure textile ventilating ducts are noise-attenuating, are not corroding, and are not affected by condensation on the surface of the air distribution system.

Textile ventilating ducts forms availability and air distribution methods is multiplicity. Cylindrical model of textile ventilating ducts with diameter to 2 meters are used up necessity of supply a large volume of air. They are hanging under a ceiling by different ways. Semicylindrical air terminal unit uses in the low rooms and halls (height less than 4 meters). They are fixed by special support fixings to ceiling and don't lose their forms even after air supply loss. There are also textile air terminal units, which represent quadrant in section along the perimeter of the ventilated room. They are located under a ceiling (fig.1, 2).

Textile ventilating ducts are easy to install to any type of ceiling thanks to small weight and don't load the structural steel. They occupy a small volume in packed form therethrough transportation costs and storage costs are reduced.

Fig. 1. Examples of textile ventilating ducts

Textile turns, pipe bends, T-branches, cross-pipes, which interconnected with stickers and zippers are using for pipeline branching. Air terminal units installing can be carried out by steel wire ropes and connecting rods. The wire frame is using to keep textile ventilating ducts in shape (in absence of air handling). It fixes inside the ventilating duct by stickers.

The minimum quantity of tools and equipment helps easily and fast installation. This is especially handy for temporary buildings (touring exhibitions, circuses, etc.). Besides, textile air-sleeves can be performed in various colour-grades, which are good match to room's interior.

Different modification groups of textile ventilating ducts can be applied depending on the selected schemes. Induced air can be handled to air terminal unit, which made of air-permeable fabric, thanks to air interpenetrates to attended room with no troubles. The perforation, special nozzle atomizers and cradles, which prevent a flow deviation, used for increasing productivity of air terminal units and reduce the resistance to air-flow. There are different combinations of perforated fabrics. In such a case, air supply and air velocity depend on large or small perforation. Such schemes help to increase the air rate of stirring without airflow increasing in the working area. Keeping fabric vibration after fittings in section down can be used stabilizing additives. Air terminal units with air side feed (fig.3) and air terminal units with double-sided perforation (fig.4).

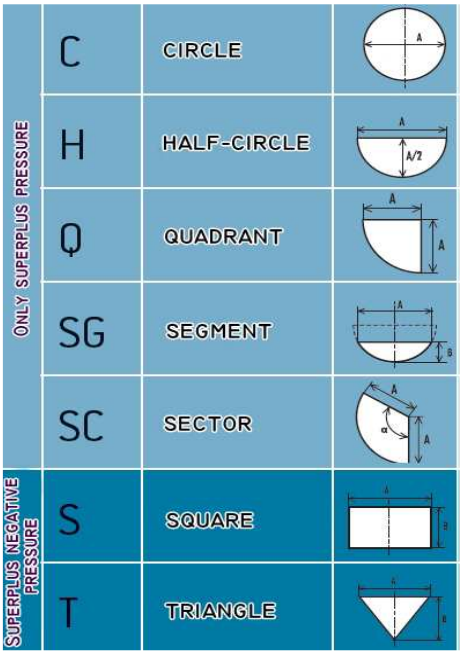

Fig. 2. Textile ventilating ducts in section

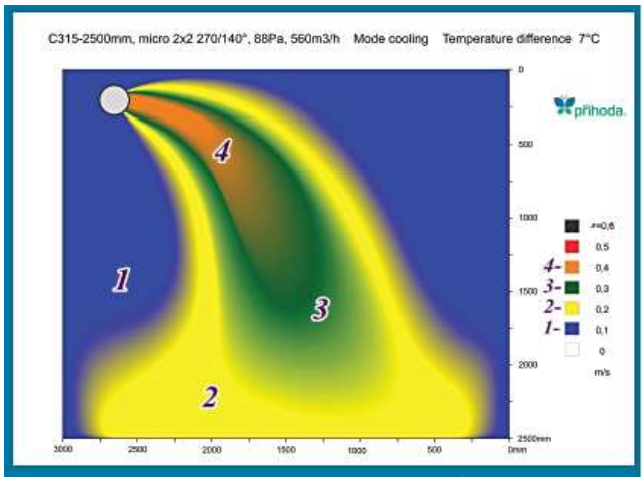

Fig. 3. Scheme of air distribution with side feed

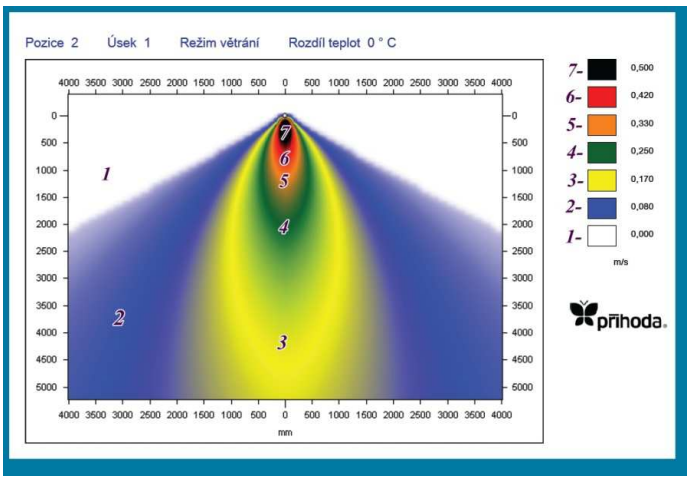

Fig. 4. Scheme of air distribution with double-sided perforation

Special features of exploitation are difficult exhaust ducts construction and possibility of installation only after straight piping.

Thanks to low price of transport costs, joining-up and maintainability in rooms with strict sanitary requirements and low air motion are important factor. Textile ventilating ducts have pride of place amongst innovative ventilation equipment.

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MODULATION AND DEMODULATION OF OPTICAL RADIATION WITH USAGE OF THE SUBCARRIER OF FREQUENCY

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Methods of modulation-demodulation of optical radiation with usage of a subcarrier of frequency for transmission and reception of video signals are considered. Influence of a subcarrier of frequency on relations between a signal/noise and level of non-linearity distortions of video signals is researched.

There are different methods of obtaining the modulated optical radiation:

1. Direct modulation is the type of modulation in which radiation LD(Laser diods) or the light-emitting diode is reached by the change of a current of pump;
2. Exterior modulation or modulation of radiation of an unmodulated light source;
3. Internal modulation which is carried out by modulator introduction in the laser resonator.

The modulator is a system in which there is an interaction of light to substance. Control of a refraction index is based on electrooptical effect (changing electric field), or on magneto-optical effect (changing a magnetic field), or on piezooptic effect (piezoelectric change of density). Electrooptical modulators are used more often. Materials with the expressed magneto-optical effect are opaque to light. Piezooptic's modulators are difficult.

Two methods of reception can be used during the demodulation:

1. Immediate reception by the photo detector (incoherent reception)
2. The coherent reception (hetero- or homodyne)

In our research the method of usage of a subcarrier of frequency on purpose improving of the relation a signal/noise and reduction of non-linearity distortions of video signals has been studied.

In picture 1 the fiber-optical system of transmission *(*FOST*)* with usage of a subcarrier of frequency is presented [2].

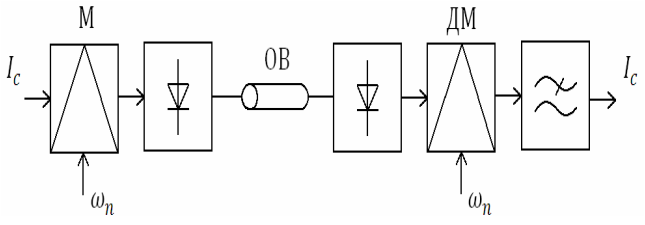

Fig. 1. FOST with usage of a subcarrier of frequency:
M – the modulator; DM – the demodulator; ω_n – frequency of a subcarrier

Double modulation is used for the analysed method. The information electrical signal is transferred to the modulator where the first operation takes place: modulation of a subcarrier of frequency either on amplitude, or on frequency or a phase, and then modulated ω_n, arrives on an optical radiator where there is a second operation: