GINETEX
THE INTERNATIONAL ASSOCIATION FOR TEXTILE CARE LABELLING

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Press release

Laundry care - How much power does it take to dry textiles?

***GINETEX** has revealed the main findings of its recent study on the impact of drying cycles on our power consumption. The study was conducted by Testex, an independent laboratory specialised in textile analysis and certification. This new research follows a preliminary study focused on the same subject dating back to 2022.*

- → The study shows that the energy consumption of a tumble dryer depends significantly on the spin speed of the washing machine. A 'standard' wash cycle is therefore the most effective in limiting a tumble dryer's energy consumption;
- → A tumble dryer operating at full load consumes more energy than when it is at 50% of its capacity (or even up to 80%);
- → Finally, if the garment remains slightly damp at the end of a programme, this reduces energy consumption by 10 to 30% (or around 0.3 kwh) and makes it easier to iron.

Power consumption is a key concern for households who face both rising energy prices and the cost of inflation on all of their daily expenses. After studying the impact of the different phases of textile washing on power consumption, GINETEX, the International Textile Care Labelling Group, has this time chosen to undertake a similar study focusing dryers.

The study identified significant differences in power consumption depending on spin speeds, fabric types and machine loads.

Power consumption varies depending on drying settings even within specific drying cycles

While drying clothes indoors is a low-energy option (although it increases moisture levels in rooms and heating bills), the power consumption of a dryer varies depending on several factors such as the selected programme, the composition of the textiles dried (e.g. cotton or polyester) and spin speed.
On this basis, we recommend that you opt for a dryer with controlled humidity programmes, using heating pump technology and an energy rating of A or better.

According to Testex's study on behalf of GINETEX, the power consumption of a dryer primarily depends on the spin speed selected prior to drying during the washing phase. **Textiles will dry more quickly if they are damp.**

- If we consider a washing cycle at 40°C as a reference point, consuming approximately 1kWh, according to the study, opting for "standard" drying. end point at -1 to 2% of the normal weight of the textiles) after a full speed spin cycle (1400rpm) **is the most efficient** means of limiting the power consumption of a dryer.
- **The type of fabric affects energy consumption for drying**. Typically, polyester consumes 70% less power compared to the standard washing cycle. In contrast, with cotton textiles, energy consumption can increase by 20 to 50% compared to a standard cycle.
- Average spin speeds (1000-1200rpm) push power consumption up by 10% for polyester and 30% for cotton, compared with a full-speed spin cycle.
- Low spin speeds (400-800 rpm) can multiply power consumption for drying by 4.5 for polyester and 2 for cotton.

Some fabrics require more power

Not all fabrics are created equal when it comes to drying. Cotton, for instance, takes longer and requires more power to fully dry. According to the study, it takes 4 to 5 times more power to spin dry cotton than polyester in a full-speed spin cycle.
This impact is less significant if the drying load is spun at low speed, i.e. if it contains more moisture However, the overall energy consumed for drying in this case is higher by a factor of 2 or more

Dryers offer an efficient means of drying textiles in terms of power consumption

According to Testex, some dryer programmes will have different effects. A dryer running with a full load will naturally consume more power than when running with 50% of a full load (or even up to 80%). This is particularly clear if a lower spin speed is selected for the washing cycle (increasing power consumption by up to 70%).
However, simply running the dryer with a full load will offset the higher power consumption if we consider the power consumption per kg of load (down by 25% to 60%).
This effect is less significant if the textiles to be dried are soaked or wet (low spin speed).

On the other hand, ‘over-drying’, i.e. greater use of the drying cycle (i.e. reducing the ‘normal weight’ of the textile by -4 to -1%) will increase energy consumption by around 0.1 to 0.2 kWh or 5% to 15% compared to normal drying.

However, if the fabric is still slightly damp after the programme (+8% to +16% of the “normal” weight) power consumption will drop by 10% to 30% (or approx. 0.3 kwh) and creases will disappear with relative ease.

Large items such as quilts and towels will require more power per kg to dry. Power consumption will vary between +25% and +120% for high-absorbency towels and sheets (cotton in both cases). The increase will depend on the dampness of the item.

Drying textiles in the open air or using a technical device will require power due to the physical properties of water. Natural drying uses ambient heat. The drying process decreases the ambient temperature and increases relative humidity causing mould to form if the room is inadequately ventilated. It also takes longer but can be sped up using air dehumidifiers.

This study was conducted by the Testex laboratory on behalf of GINETEX between June 2023 and June 2024. It focused exclusively on the power consumption of dryers during the selected programmes.

For this study, the aim of the tests is to establish quantitative indicators of the electrical energy consumed when certain drying parameters are modified. The parameters used to establish these results are as follows:

- Energy consumption during drying
- The impact of spin speed at the end of a wash cycle and certain drying programme settings
- The volume of textiles to be dried

As a reminder, this study is valid for an unlimited period.

About GINETEX:

Established in Paris in 1963, GINETEX (International Textile Care Labelling Group) is behind an international textile care labelling system designed to inform textile companies, as well as consumers, about the best ways to care for their textile garments. The care symbols used are equally registered trademarks of GINETEX and COFREET. The group promotes these symbols and coordinates its technical content, which is essential for the definition and application of the care labelling code, at international level. GINETEX currently has 21 member countries.

Press contacts

MAARC Agency
Adrien Jibidar – adrien.jibidar@maarc.fr – +33 (0)6 95 46 31 43
Ando Razakarisoa – ando.razakarisoa@maarc.fr – +33 (0)9 72 22 00 68

GINETEX contact

Pascale Florant - Secretary General - +33 (0)1 47 56 31 71
www.ginetex.net
www.clevercare.info
The MON ETIQUETTE app (available on the App store and Google Play)