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# FACTORS AFFECTING SURFACE CLEANLINESS IN TURNING PROCESSING OF POLYMER MATERIALS

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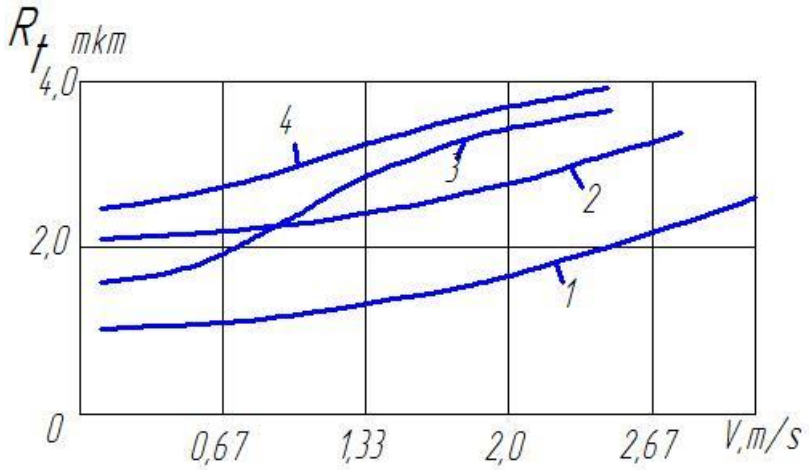
| ***A B S T R A C T*** | ***K E Y W O R D S*** |
| --- | --- |
| Annotation: this article refers to the cutting processing and cutting processing of resin materials and the dressing of the shavings. When cutting, the cutting modes are how they are, and the cutting modes are prepared in the direction of the effect on the surface cleanliness. | Polymer, shavings, Cedar-this is, sharpener, metal, stekloplast, organic glass |

It is obtained by molding plastic products, molding (molding under pressure, pressing and head) methods. However, many types of high precision details that are produced on strict demand can be achieved by cutting back on polymer materials. Processing methods depend on the equipment and equipment used. Most often, for metal and woodworking, a cutting tool, a bench, is used. With this, the variety of types of effective processing of cutting plastic, the specific characteristics of the desired processing of plastic, the lack of imagination is determined. For example, the surface of the plastic treated with cutting is often scratched, with cracks and streaks, covered with traces of the cutting tool. As a result of the cutting, burns are observed on the surface of the reagoplasts from the dressing of the overcoat and the folds from melting on the surface of the thermoplasts, as a result of which there is a need to perform additional finishing work on the details. It is also possible to observe the scraping(fracture)of the tool cutting the edge of the material and its ingestion, except for the crossbar. The reason for these difficulties is the lack of good knowledge and inadequacy of rheological (tension, viscosity, elasticity) and thermal properties (specific heat capacity, heat transfer, heat dissipation coefficient)of plastics.

The speed of cutting does not seriously affect the ductility of the treated surface . The height of the unevenness varies within a class boundary or subtracts an insignificant amount from the same class boundary. The speed limit for a material is set, according to which the processed surface is ideal-the hardness is the highest and the lowest. It is characterized by the character of being a hararet factor and the dressing of the shavings associated with it. 1.3 and 1.4 in the drawings, the surface is the idea-the dependence on the speed of cutting is given in the graphs.

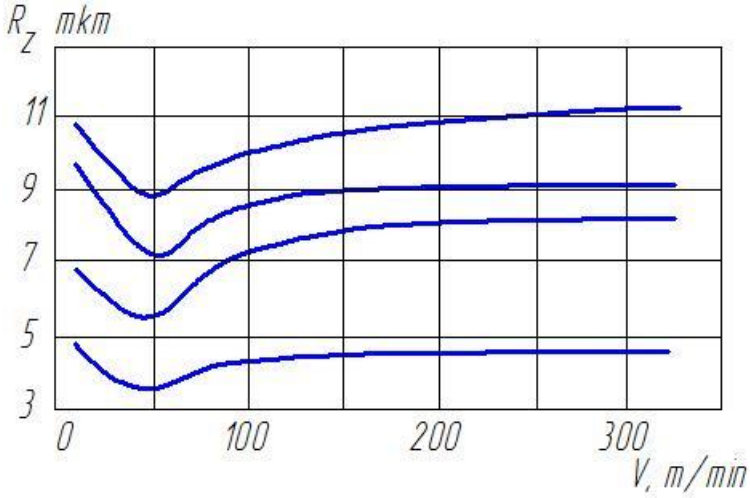
1- as can be seen from the graph, with the increase in the cutting speed in all types of work, the surface is uneven-this will increase, but this increase will be much lower than the increase in the cutting speed




1. drawing.

The uniqueness of the plastic surface of the glass-the linkage to the cutting speed: 1-or sharpening; 2-cross-milling; 3-drilling; 4-longitudinal milling.

2- as seen in the drawing, the dependence of surface cleaning on the cutting speed for the plastics under study is given in the images of reeds with a clearly expressed minimum.




2. drawing.

The processed surface is ideal-the dependence of the hardness on the cutting speed: 1-Organic Glass; 2-voloknit K-21-22; 3-voloknit K-18-2; 4-tekistalite (plastic).

When the cutting speed is increased in plastics or cutting, the surface is uneven-the rudeness initially decreases, reaches a minimum and gradually increases. The optimal amount of cutting speed is 40-45 m/min. will be in range.

The magnitude of the processed surface depends on the geometric parameters of the cutting tool. The manifestation of the optimal modes of processing of raw materials or raw materials on the Xar-type polymer was seen in the sorting of geometric parameters of the cutting tool.

The minimum thickness of the surface of the plastic details is-the front angle of uniformity is from -5° to+20° dressing when applied with cutters. When the front angle of the cutters is more than 20°, there is a displacement, fracture on the surface of the plastic detail. This leads to the dressing of the grooves on the treated surface and an increase in the uniformity of the surface, the application of front-angled cutters above -5° leads to a fracture of the top of the current and an increase in the uniformity of the surface.

The optimal amount of the rear corners of the cutters used in the laying of plastics lies in the range from 15° to 25°. If the back corner is enlarged, the friction of the back surface of the cutter to the surface being processed is reduced. As a result, the surface roughness decreases. However, the heat dissipation property of the cutting wedge and its uniformity in chisels above the rear angle 30° decreases.

The head angle in the plan from 30° to 60° is a high-class ideal-it allows you to reach the bodirity. The reduction of the angle in the plan (less than 30°) increases the compression of the incomplete product, which can lead to a violation of the appearance of the form, vibration dressing. When the auxiliary angle in the plan is grown from 10° to 25°, it leads to an increase in the height of the unevenness in 1,2÷1,7 times. The surface of the upper klass cleaning is rough-in order to obtain its uniformity, it is necessary to work with F=1÷2 mm fascia cutters in thin (thin, elegant) cutting of plastic.

According to a number of authors, the presence of dressing shavings significantly determines the process of cutting the scan and its results. The cutting power, energy consumption and the amount of heat dissociated, the accuracy and quality of processing depends on the working conditions of the tool and the workbench, on the process of dressing the shavings.

The mechanism of dressing shavings is formed by the legislation of deformation and decay. The combination of tension and adhesion in itself is a characteristic feature of polymers. Polymers are like a solid, tense body in one case, in another case they are like a viscous liquid, but the viscosity and the liquid are mutually complementary. Polymeric bodies can not be pure viscous, pure viscous, and their feats are not subject to the law of Guk, nor to the law of Newton's viscosity. A material can be brittle or supple depending on the character of the tension condition and the deformation speed during the cutting, this indicates the dressing shavings.

1. classification of types of crumbs, which can be dressed when cutting plastics in the table

| **Chippings** | **Factors of the appearance of shavings.** |
|---|---|
| Continuous feed | Accelerated shearing deformation. |
| Continuous decay | Non-stop slip on impact of tension and shrinkage |
| Simple shavings | Plastic shredding at the impact of tension. |
| Ring-ring decays | Plastic shredding under the influence of simple grinding. |
| Complex decays | Plastic wear under the influence of silage tension or stretching tension |
| With cracks | Tense decay, brittle decay. |

Dressing of a continuous strip edge is usually observed when cutting materials of low speed, characterized by high shear strength and extreme wear, similar to rubber. The deformation of the shavings is mainly elastic, and its thickness is approximately equal to the depth of cutting. This type of scraping differs from the Strip scraping, which occurs when cutting metal, because it is not from the plastic deformation of the metal, but as a result of intensive elastic deformation dressing.

When dressing shavings, the vibration of the cutting force, and the surface is rough-the hardness is not so great, and the accuracy of the details is high.

Continuous shredding occurs when the grinding voltage of the shavings is less than the material strength. The Siljish plane (decays) is produced by a shredder movement directed along this plane of

scraping, directed upwards from the peak of the cutting tool. Dressing continuous filing is the result of a small interval between the elements of the wiper. Simple cut-off shavings are made of dressing with the motion of breaking down along the siljishin plane, however the intervals between the elements of the push are much tougher and therefore they are cut-off dressing.

Complex cut-the cut is formed as a result of complex tension.in the bunda, a strong clamping voltage is added with a wiper voltage, the cutting is performed with a blunt-angled sharpener.

Slit-cut shavings are made of fragile reagent materials and several thermoplastics with a front angled tool on the outside of the frame and with extreme deep cutting. The protruding slit is directed downward at an angle. Dressing cut shavings is when the slit grows under the influence of a mammoth that bends up to a certain length. This type of filing dressing is subjected to brittle breakers. The crumb is obtained in elastic decay, so on the surface of the crumb there are small incisors.

**Conclusion**

As is known, the process of dressing bandaged shavings is much more useful than energy saving. In this case, the degradation of the material occurs only along the cutting line, and the remaining material is separated from the finished product by its plastic deformation.

It should be noted that from the point of view of the rational organization of the cutting process in the processing of polymer materials, the bandaged shavings are quite acceptable, since it is a dynamic stagnant indicator of the technological system that ensures that the treated surface is of high quality.

The quality of the surface treated when dressing continuous shredding crumb is very good, therefore the material for dressing continuous shredding crumb shredding is considered to be the best processed material. This scraper is suitable for a ribbon scraper, which is obtained when cutting metals.

The idea of the surface on which the decay is processed by obtaining a simple continuous edge is-this acquires the highest axamity, while the accuracy of the dimensions of the details is lower.

When dressing a fractured scraper, many crevices appear on the treated surface, while the crevice is high, and the machining accuracy is low.

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