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Welding Of

**Ultrasonic**

**Polyamide**

**Welding Of**

**Polyamide**

**Influence Of**

**Moisture On**

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*Page 5/30*

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**polyamide—influence  
of moisture on ...**

The welding of

hygroscopic materials

such as polyamide can

lead to unstable

conditions during the

welding process. Due to

changing material

properties, the ultrasonic

welding process is

influenced...

**Ultrasonic Welding of**

*Page 6/30*

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Welding Of

Polyamide

Influence Of

Picture On

**Plastics – Materials  
Guide**

Farshbaf ZR (2015)

Experimental evaluation  
of ultrasonic-assisted  
friction stir process  
effect on in situ  
dispersion of multi-  
walled carbon  
nanotubes throughout  
polyamide 6. Int J Adv  
Manuf Technol  
81:2087–2098.

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**Ultrasonic welding of  
polyamide—influence  
of moisture on...**

Ultrasonic welding of  
polyamide—influence of  
moisture on the process  
relevant material

properties Hopmann,  
Christian; Aaken, Anika

2014-05-22 00:00:00

The welding of  
hygroscopic materials  
such as polyamide can  
lead to unstable



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## Ultrasonic

### Welding Of

#### Polyamide

##### Influence Of

###### Moisture On

conditions during the welding process. Due to changing material properties, the ultrasonic welding process is influenced heavily by the moisture level of the welding parts.

## **Research Papers -**

### **2018 : Publications :**

#### **American Welding ...**

trasonic welding of carbonfiberreinforced

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## Ultrasonic

## Welding Of

## Polyamide

## Composite On

## Metals

polyamide 66 fell in the range of 95° to 145°C.

This finding was attributed to the avoidance of decomposition in the composite and the decrease in the joint's temperature gradient during ultrasonic welding. The joints welded with preheated workpieces of 125°C exhibited the highest

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Welding Of

endurance limit,

Polyamide

Influence Of

**Ultrasonic Welding Of**

**Polyamide Influence**

The welding of hygroscopic materials such as polyamide can lead to unstable conditions during the welding process. Due to changing material properties, the ultrasonic welding process is

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Welding Of

Polyamide

Influence Of

Moisture On

**Factors affecting the  
joint strength of  
ultrasonically ...**

Process. In metals,  
welding occurs due to  
high-pressure dispersion  
of surface oxides and  
local motion of the  
materials. Although  
there is heating, it is not

enough to melt the base materials. Ultrasonic welding can be used for both hard and soft plastics, such as semicrystalline plastics, and metals.

### **Effect of moisture on the ultrasonic welding of carbon ...**

In this study, weldability of ultrasonic welding of 4-mm-thick

fiber carbon/nylon 66

composite in lap

configuration was

investigated. Ultrasonic

welding tests were

performed, and the weld

appearance,

microstructure, and

fractography of the

welded joints were

examined using optical

and scanning electron

microscope.

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Ultrasonic

Welding Of

Polyamide

Reinforced Of

Plastics

## **Ultrasonic Welding of Carbon Fiber**

### **Reinforced Nylon 66 ...**

How to Solve Common

Ultrasonic Welding

Problems. Ultrasonic

welding is a widely

recognized and accepted

process for joining

thermoplastic materials.

It offers many

advantages, including

process reliability and

repeatability, lower

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Welding Of

Polyamide

Influence Of

Moisture On

energy usage than other

joining techniques,

material savings

(because there is no

need for consumables,

such as glue or

mechanical fasteners),

and labor savings.

**Ultrasonic welding of  
polyamide—influence  
of moisture on ...**

Sensors and electrical

components are not only



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Welding Of

Polyamide

Influence Of

Microstructure On

used in industrial manufacturing but also in automation engineering or in daily use. Ultrasonic welding is particularly suitable for their production and complies with product requirements, such as: High strength; Reliable functionality of components; 100% tightness; More on the industry

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Welding Of

**Weld Quality**

**Prediction in**

**Ultrasonic Welding of  
Carbon ...**

The influence of moisture absorption on the weldability of carbon-fiber-reinforced Polyamide 66 (Q/PA66) was investigated via ultrasonic welding in a lap-joint configuration. Results showed the...

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Welding Of

**Effects of Preheat**

**Treatment on the**

**Ultrasonic Welding of**

...

There are a number of factors that affect the weldability of thermoplastics in the context of ultrasonic welding. The main ones are: Polymer structure, i.e. is it amorphous or semi-crystalline?

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Welding Of

Polyamide

Influence Of

Material On

**Factors affecting the ultrasonic welding of thermoplastics ...**

The most commonly used methods for nylon are spin, vibration, dielectric and ultrasonic welding. Laser welding and non-contact infrared have also successfully been used. The choice of process is affected by the form of the material-

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Welding Of

moulded component or  
film

Influence Of

**Effect of Moisture on  
the Ultrasonic Welding  
of Carbon ...**

Ultrasonic Welding of  
Polyamide—Influence of  
Moisture on the Process  
Relevant Material  
Properties,”

**Optimizing the weld  
factors affecting**

*Page 21/30*

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Welding Of

**ultrasonic welding ...**

Polyamide

Influence Of

Manufacturing Of

replicability is usually

demanding. Downscaled

tensile specimens were

manufactured using

ultrasonic molding on

polyamide pellets not

only to obtain

specimens, but also to

investigate the influence

of the processing

conditions on process

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Welding Of

performance and  
material

Polyamide

Influence Of

Moisture On

**What techniques can I  
use to weld nylon? -**

**TWI**

Abstract. Ultrasonic  
welding of

thermoplastic

composites has become

an important process in

industry because of its

relatively low cost and

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Welding Of

resultant high quality joints. An experimental

study, based on the

Taguchi orthogonal

array design, is reported

on the effect of different

processing factors on

the joint strength of

ultrasonically welded...

**Ultrasonic welding -**

**Wikipedia**

AMPLITUDE AND

FORCE PROFILING:

*Page 24/30*



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Welding Of

STUDIES IN  
ULTRASONIC

WELDING OF

THERMOPLASTICS

David A. Grewell

Branson Ultrasonics

Corporation

ABSTRACT This paper

reviews effects of

amplitude and force

control during the

ultrasonic welding

**How to Solve Common**

*Page 25/30*

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Welding Of

Polyamide

Influence Of

Mixture Of

## **Ultrasonic Welding Problems : Plastics ...**

t: 01793-641040. The

process of ultrasonic welding of plastics is achieved by applying a vibrating metal tool (horn) at  $90^\circ$  to the stationery plastic parts which then vibrate.

When combined with pressure, friction produces heat & melts the parts at the horn

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Welding Of

Polyamide

Influence Of

Moisture On

contact point. Once cooled down a solid homogeneous weld between the 2 parts is created.

## **Which are weldable plastics? - Herrmann Ultrasonics**

Ultrasonic Welding

Ultrasonic welding was performed using a KZH-2026

multifunction UW

machine with a nominal power of 2.6 kW and a nominal frequency of 20 kHz. The welding setup used in this study is schematically shown in Fig. 1. The piezoelectric converter converts the electrical signal into mechanical vibrations. To transfer the ultrasonic waves

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Welding Of

**conditions on**

**manufacturing ...**

Influence of Horn

Misalignment on Weld

Quality in Ultrasonic

Welding of Carbon

Fiber/Polyamide 66

Composite The effect of

horn misalignment on

weld size was examined

and validated. by Q. Zhi

et al. Published 05/2018

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