

ABSTRACT

Wheel house products at PT. X is processed in a cold forming. The condition of press machine, pressure, and dies is good during the forming process of wheel house, but still found defects. Therefore, this research, to know the effect of temperature that cause the crack on the wheel house for press drawing results

This Research is using observation of field condition and testing in the laboratory. Observation field condition with temperature measurement using infrared thermography tool and measurement of thickness reduction wheel house using thickness gauge tool. And then doing tensile testing in laboratory.

The results of temperature measurement, obtained maximum temperature (55°C) is most common in the forming process 1000 wheel house than 600. When the formation process of 1000 wheel house found a defect in the form of scratches due to dies experiencing expansion. The result of thickness reduction measurement is at 55°C . The thickness reduction value start having depletion exceeding a company standard. The result of tensile testing shows that the higher the temperature then the tensile strength value is decreases.

Keywords : Wheel House, Drawing Press Machine, Forming, Crack.

INTISARI

Produk *wheel house* pada PT. X diproses secara *cold forming*. Saat proses pembentukan *wheel house* keadaan mesin *press*, tekanan, dan *dies* dalam keadaan baik, namun masih ditemukan cacat. Oleh karena itu, penelitian ini dilakukan untuk mengetahui pengaruh temperatur terhadap timbulnya *crack* pada *wheel house* hasil mesin *press drawing*.

Penelitian dilakukan dengan pengamatan kondisi lapangan dan pengujian di laboratorium. Pengamatan kondisi lapangan dilakukan dengan pengukuran temperatur menggunakan alat *infrared thermography* dan pengukuran *thickness reduction wheel house* menggunakan alat *thickness gauge*. Pengujian di laboratorium dilakukan pengujian tarik.

Hasil pengukuran temperatur, diperoleh temperatur maksimal (55°C) lebih sering terjadi pada proses pembentukan 1000 *wheel house* dibandingkan 600. Saat proses pembentukan 1000 *wheel house* ditemukan cacat berupa goresan dikarenakan *dies* mengalami pemuaian. Hasil pengukuran *thickness reduction* adalah pada 55°C nilai *thickness reduction* mengalami penipisan yang melebihi standar perusahaan. Hasil dari pengujian tarik menunjukkan semakin tinggi temperatur maka kekuatan tarik menurun.

Kata Kunci : *Wheel House*, Mesin *Press Drawing*, Pembentukan, Retak.