5023 Willow Creek Rd. Machesney Park II 61115 . Phone (815) 229 - 8620 . FAX (815) 229 - 8610

# Project # 206-293

### TG Tools United Co.

Performance and Endurance Testing
Cutting Tools

Monday, October 23, 2006

\*\*\*\*\*\*\*\*

\*ACLASS\*\*

\*\*\*\*\*\*\*\*

ISO/IEC 17025 Accredited Laboratory
Certificate Number AT-1119

Prepared for: TG Tools United Co.

1010 Cedar Ave. St. Charles, IL 60174 Attn: Ms. Rainbow Wang

(800) 687-4122

By: Atif A. Odeh, Principal Metallurgical Engineer Christopher Page, Sr. Engineering Technician Steve McDaniel, Failure Analysis Engineer Matt Strack, Metallurgical Lab Technician

206-293



### **Conclusions:**

## KIK Spade Bit,

- 1. Able to drill plastic including Acrylic
- 2. Able to drill none ferrous sheet metal, clean entry and no burr
- 3. able to bore 90 deg. curved path

SAMPLE INFORMATION: Page 2 of 41

206-293

Spade Bits:

TG Spade – 7/8" (KIK Point) Irwin Speedbor – 7/8" (3 Points)



Page 2 of 41

#### **Test Methods and Procedures:**

 Sheet brass – Ability of KIK Spade drill none-ferrous sheet metal Hand Power Tools – Drill straight down with back material wood Check the hole's entry and exit





Page 12 of 41

206-293

Mechanical TEST DATA AND RESULTS: "Continued"

Spade Bits: Cutting Ability Test – Brass:

Test material: Brass sheet 0.016" thickness.

The TG spade bit was able to cut a round section from the brass test plate.





Page 5 of 41

Test Methods and Procedures: "continued"

 Wood Block – Ability to produce curve path Hand power tool





Page 7 of 41

206-293

Mechanical TEST DATA AND RESULTS: "Continued"

Forstner and Spade Bits: Curved Cut Ability:

Both TG Forstner and Spade bits were able to bore a 90 deg. curved through hole in a 4" X 4" wooden post.





Page 3 of 41

#### Test Methods and Procedures: "continued"

 Acrylic - Cracking Hand Power Tools – Drill straight down Scale under wood – 25Lbs pressure, full power





Page 12 of 41

206-293

Mechanical TEST DATA AND RESULTS: "Continued"

Forstner Bits: Cutting Ability Test - Acrylic:

Test material: Acrylic plate 0.70" thickness.

Both the TG Forstner and TG spade bits were able to satisfactorily bore into the acrylic test plate.