

WiseRoot+

HIGHLY EFFICIENT ROOT PASS WELDING

"WiseRoot+ is amazingly user-friendly and performs as advertised. It allows us to easily deal with a wide range of fit up discrepancies such as misalignment or variable root gaps. To date, we have experienced a 100% pass rate with the welds tested with WiseRoot+ using Kemppi FastMig X 450."

– Scott Woodman, Director, P&W



PRODUCTIVE AND HIGH QUALITY MIG WELDING PROCESS

WiseRoot+ is an optimized short arc process for root pass welding without backing. The process is highly effective being significantly faster than stick (MMA), TIG and standard MIG/MAG short arc welding, yet producing high quality welds. The welding of fixed pipes in any position is possible and groove angle can be reduced by even 40%, depending on the application.

A stable and efficient arc resulting in excellent weld quality is enabled through precise real time voltage measuring, current control and right in time filler metal droplet releasing. Filler metal transfer is smooth and spatter-free. WiseRoot+ is a MIG/MAG welding process 131, 133, 135, 136 or 138 according to standard EN ISO 4063. WiseRoot+ suits for Kemppi FastMig X welding equipment and is a standard feature in FastMig X Pipe setup, and an optional extra in FastMig X Regular and Intelligent setups.

KEY BENEFITS



MORE PRODUCTIVE

Weld more per day compared to normal MIG/MAG welding



LESS LABOR COSTS

Per welded meter



SAVINGS IN FILLER COSTS

By ability to decrease groove angle by 10°

KEY APPLICATIONS



TANKS AND SILOS



PRESSURE VESSELS AND BOILERS



PIPELINES

BENEFITS



- Increases welding speed compared to MMA, TIG and standard MAG short arc welding
- Gives the possibility to reduce groove volume
- Allows wide range of root gaps and faces without incomplete or excessive penetration
- Easier to learn welding technique
- No need for backing ring
- Less spatter
- Allows welding of fixed pipes in all positions
- Allows welding of rotated pipes
- Allows welding with long cables
- Processes can be used with different materials; steel, stainless steels and high alloyed steels
- In WiseRoot+ excellent arc characteristic also with CO₂
- Wide selection of wire diameter (0,8 – 1,2)

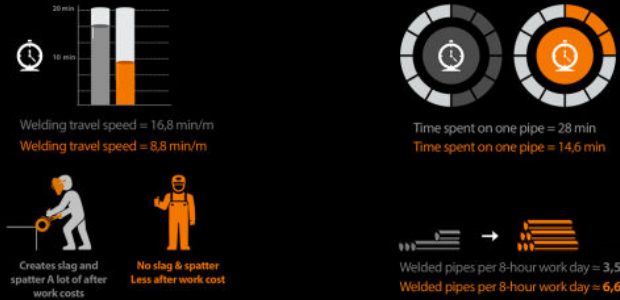
WELD OVER 80 % MORE PER DAY BY USING WISEROOT+

You can weld for over 80 % more each day with WiseRoot+ compared to conventional MIG/MAG welding. The welding groove can be decreased from 60° to 50°, which leads to a 50% smaller groove area for filling and capping. WiseRoot+ is also notably faster than 1-MIG or TIG: the welding travel speed with WiseRoot+ is 20-25 cm/min when compared with 1-MIG's 8-12 cm/min, and TIG's 5-9 cm/min, depending on the application.

In our example case, you can weld 11 meters in one working day with WiseRoot+ and only about 6 meters with MIG/MAG.

Weld over **80 %** more per day and save **50 %** in labor and filler costs with **WiseRoot+**

Pipe welding test with WiseRoot+
MIG/MAG vs. **WiseRoot+**

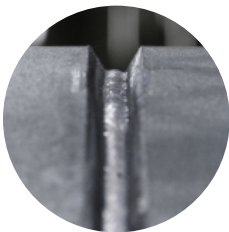


Comparison table for root pass welding of a 530 mm pipe
Arc time = 20 % and labour costs = 30 € per hour
See calculation.



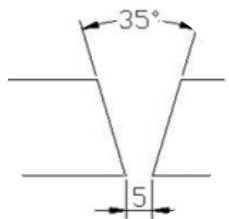
50% SAVINGS ON LABOR COSTS WITH WISEROOT+

With WiseRoot+ you can reach up to 50% lower labor costs per welded meter. This is a result of the faster travel speed and the ability to decrease the groove angle. The narrower groove angle means only one filling and capping pass is needed. In addition, WiseRoot+ allows fluctuation of the root gap, making the afterwork costs lower due to the limited amount of slag and spatter.



SAVE 50% IN FILLER COSTS

After being able to narrow the groove angle from 60° to 50°, the area for filling and capping is significantly smaller leading to more than 50% reduction in the consumption of filler material.



REACH 40% MATERIAL SAVINGS

In the example of a shaft tube longitudinal weld, it was possible to decrease the groove angle from 60° to 35° and achieve 40 % material savings and a higher welding speed. The root gap was 5 mm, but can be wider as WiseRoot+ process allows variations.

The welding position was PG, filler wire Fe 0.9-1.2 mm, and shielding gas Ar+18 % CO₂.

ALTERNATIVE EQUIPMENT AND SOFTWARE



WiseRoot

Optimized short arc process for productive root pass welding with FastMig M. Excellent weld quality through automatic adjustment of the welding parameters. Gives higher speed than stick (MMA), TIG or MIG/MAG short arc welding. Also available for automated welding.

TECHNICAL SPECIFICATIONS

WiseRoot+

Product code

9990418