



**MIPS**

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**MGSM**

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# Material Intensity Per Service

Material Intensity per Service (MIPS), was developed by B. Schmidt-Bleek at the Wuppertal Institute, Germany

MIPS serves as an ecological rucksack or footprint of materials. Extensive comparisons and research has been done in Germany.

*The following tables show MIPS without considering transport impacts, all tons per ton*

# MIPS

Abiotic      Air poll.      Water use/poll.      EnergyKWH

**Platinum**

**320,000**

**13,800**

**193,000**

**2,6370,000**

**Aluminum**

**85.4**

**9.8**

**1,378**

**16,000**

**Steel**

**7.0**

**1,295**

**44.6**

**441**

# MIPs

Abiotic

Air poll.

Water use/poll.

Energy KWH

10.8

2007

296.3

4,538

Fiberglass

3.2

0.2

21.3

253

Portland cement

# MIPS

Abiotic      Air poll.      Water use/poll.      Energy KWH

**17.3**

**117.7**

**PVC**

**0.7**

**1,153**

**Linoleum**

**2.0**

**2.0**

**6.7**

**4**

**Pine wood**

**0.9**

**0.1**

**10**

**113**

# Challenges

**MIPs are like MPG, they depend on many factors**

**The range is very wide for some materials, it could be very efficient processing with minimal ecological cost (Germany) or very poor processing with very high ecological costs (China). Social costs can also vary.**

**Water and energy use may vary by 10 times or more for some materials depending on processes and sources, and it might be renewable energy!**