



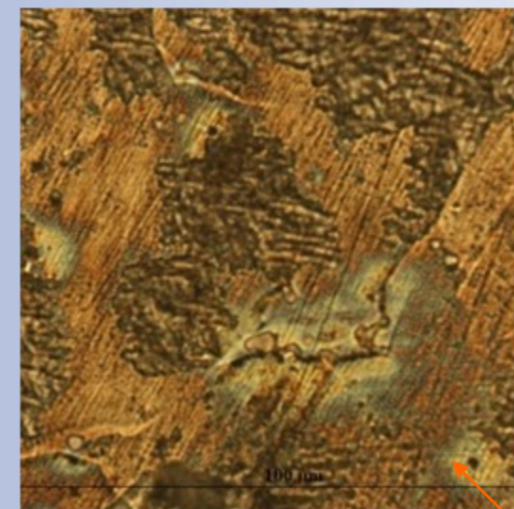
MILL KNIFE FOR ASPHALT CUTTING/STRIPPING THAT HAS WEAR SELF PROTECTION AND AUTO BLOCK WHEN SPINNING

The project proposes a novelty in the maintenance equipment for the infrastructure of roads and highways, namely by making a bimetal version of consumables, reinforce and strengthened with weld, re-melted with laser. The active areas of the knives, required to wear, is achieved by loading chrome alloys, reinforced with large grains, that provide protection for rotation lock, the cutting elements, made from carbides, are superficial re-melted by laser, which are freight by the deposition of the protection for rotation lock layer.

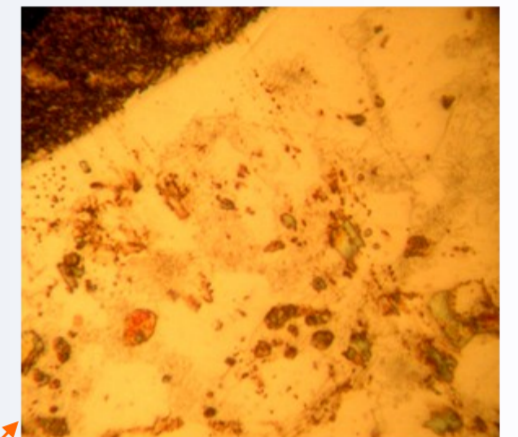


Active surface

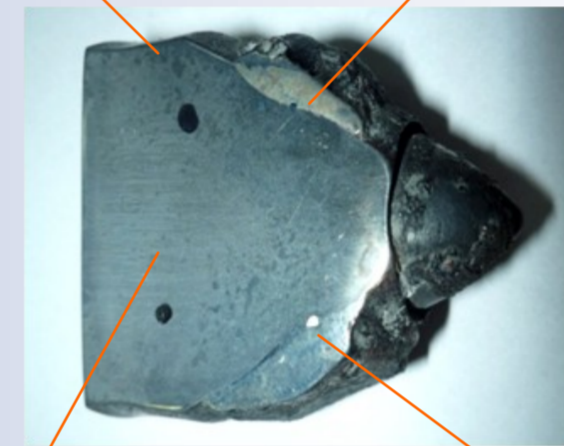
Cutter knives



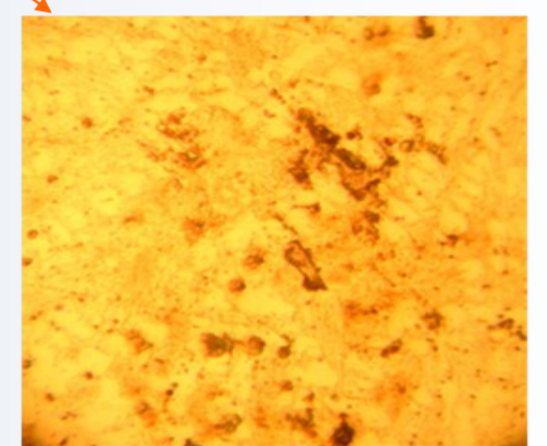
a) BM - 200X



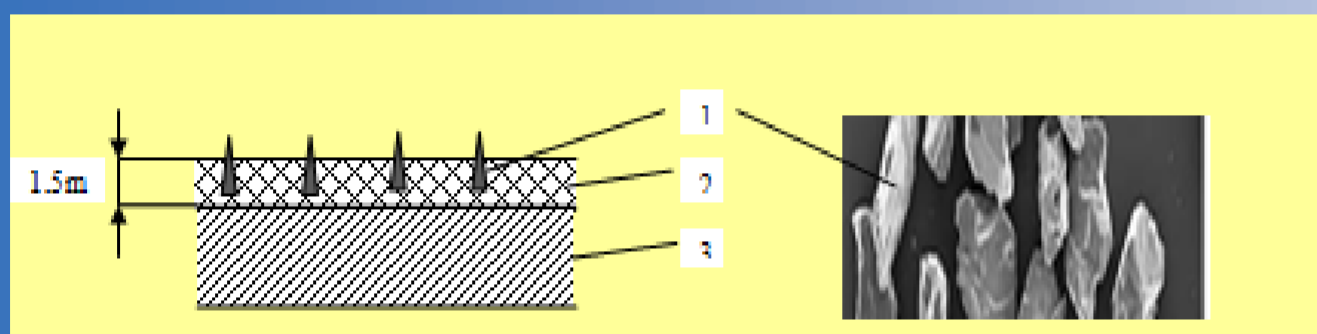
b) HAZ - 200X



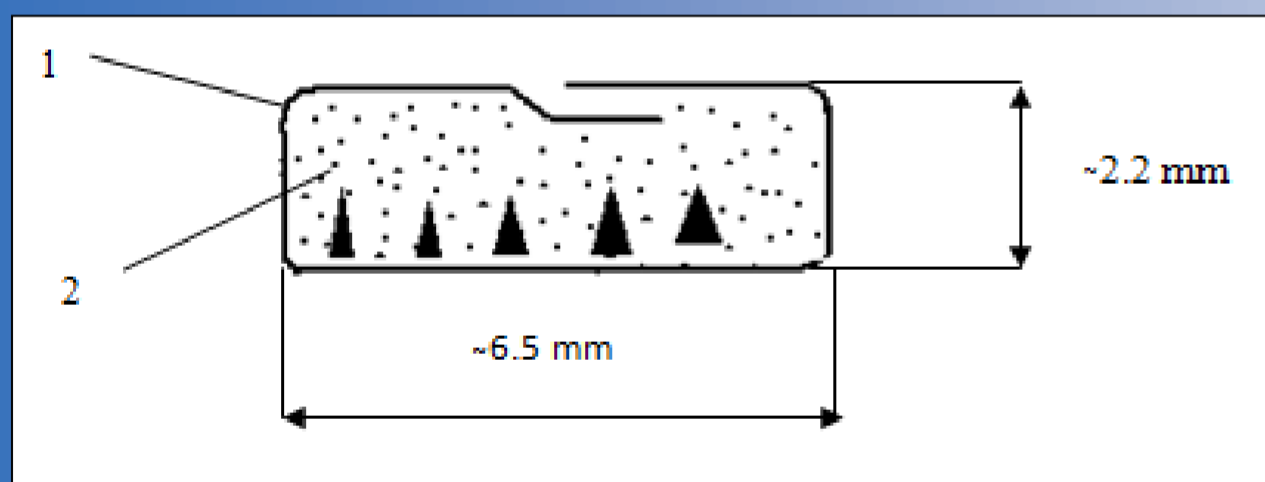
c) HAZ - 200X



d) DM - 200X



Overall layout BM - DM
1 - Spur of carbide; 2 - deposition; 3 - BM



Sheath profile 1 - sheath; 2 - composite core

Macro and micro structural analysis images of the loaded zone by loading with oxiacetylenic flame and VTCr₂,5Ti D-attack Nital 2%, time: 2s
a) the base metal, BM, 200X, b) the heat affected zone, HAZ, 200X, c) the heat affected zone, HAZ, 200X, d) deposited material, DM, 400X.



Asphalt milling tooth

Table. Microhardness measured

| No. | Microhardness HV ₀₁ | | | Equivalent hardness HRC | | |
|---------------|--------------------------------|--------------|--------------|-------------------------|--------------|--------------|
| | BM | HAZ | DM | BM | HAZ | DM |
| Cordon | | | | | | |
| 1 | 319 | 549 | 749 | 33 | 52,6 | 61,9 |
| 2 | 331 | 558 | 752 | 33,5 | 53,1 | 62 |
| 3 | 326 | 555 | 762 | 32,9 | 52,9 | 62,4 |
| 4 | 327 | 566 | 773 | 33 | 53,6 | 62,8 |
| 5 | 322 | 539 | 775 | 32,4 | 51,9 | 62,8 |
| Medie | 325 | 553,4 | 762,2 | 32,96 | 52,82 | 62,38 |

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