carbide targets for improving toughness properties. Toughness properties can preferably be measured for example in HRC indenter tests and scratch tests.

For deposition of the directly above-mentioned embodiment the inventors recommend using a PVD sputtering process for depositing adhesion layer and the under-layer. A PA-CVD or PVD sputtering or ARC evaporation or HIPIMS for depositing the upper-layer is preferably used.

The objective of the present invention is attained by providing a method for producing a valve component according to claim 7.

Preferably a PVD sputtering process is used for depositing the under-layer and a PA-CVD or PVD sputtering or ARC evaporation or HIPIMS is used for depositing the upper-layer.

Preferably between the coating and the sliding surface a Cr layer is deposited as adhesion layer, preferably using a PVD sputtering process.

Preferably the under-layer comprises:
a first-under-layer comprising Cr and WC, wherein the first-under-layer is formed having a multilayer structure comprising:

a first sub-layer deposited on the Cr adhesion layer, a second sub-layer deposited on the first sub-layer and a third sub-layer deposited on the second sub-layer,

- a third-under-layer 213 deposited on the second-under-layer 211 deposited as gradient layer, exhibiting decreased average concentration of WC along its layer thickness with final average concentration of WC of 0 at.%, and
- an upper layer 22 of DLC, preferably having layer thickness higher than 1.5 micrometers, more preferably higher than 2 micrometers, still more preferably between 3 micrometers and 5 micrometers.

For deposition of the directly above-mentioned embodiment the inventors recommend using a PVD sputtering process for depositing adhesion layer 3 and the under-layer 21. A PA-CVD or PVD sputtering or ARC evaporation or HIPIMS for depositing the upper-layer 22 is preferably used.

For the deposition of the Cr layer Cr-targets can be sputtered in argon atmosphere. Preferably following for depositing the first sub-layer WC-targets can be sputtered by increasing sputtering power continuously while sputtering power at the Cr-targets can be maintained constant. For depositing the second sub-layer both the sputtering power of the Cr-targets and the WC-targets can be maintained constant. For depositing the third sub-layer the sputtering power at the Cr-targets can be continuously reduced till disconnection of the Cr-targets and the sputtering power at the WC-targets can be maintained constant or increased continuously. For depositing the second-under-layer 212 a carbon-containing gas can be introduced in the coating chamber and maintained constant, for example acetylene gas. For depositing the third-under-layer 213 the sputtering power at the WC-targets can be reduced continuously till disconnection of the WC-targets while the