MATERIALS SCIENCE II

HARDNESS OF CARBURIZED LAYER

Student:	Year:
Date:	Teacher:

Program:

a) Chemical-heat treatment of steel (carburization, nitridization, carbonitriding).

b) Basic charactarestics of carburized layers, main parameters of carburization and it's influence on quality of layers.

c) Determination of Case Hardening Depth, in short CHD (EHT).

Tasks:

Task 1: Determine from the microphotograph (hardness measurement) case hardening depth CHD and evaluate it's quality.

Task 2: In case, that layer has no sufficient parameters, suggest a way of solving the problem.

Micrograph:

Number: …….

Magnification: …….

Parameters of carburizing:

Temperature: …….

Time: …….

Carburizing potential: …….

Carburization

TABLE 1: *Measured and calculated values*

	on microphotograph			**real values**				
Indent no.	D [ ]	U_1 [ ]	U_2 [ ]	d [ ]	u_1 [ ]	u_2 [ ]	u_{AVG} [ ]	HV1
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Note:

The diagonals are due to the accordance of symbol with depth of layer marked in the old manner: marked with the letter *u*.

Graph - visualized course of hardness:

Draw the graph on mm paper (hardness vs depth under the surface).

Case Hardening Depth (CHD):

Measured thickness of carburized layer according to given criteria: …….

Carburized layer is: ***convenient*** x ***inconvenient***

Substantiation:

The proposed solution (in case of inconvenient parameters):

Conclusion: