

# ISO 10075-2:2024-07 (E)

## Ergonomic principles related to mental workload - Part 2: Design principles

<b>Contents</b>		<b>Page</b>
Foreword		v
Introduction		vi
<b>1</b>	<b>Scope</b>	<b>1</b>
<b>2</b>	<b>Normative references</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions</b>	<b>1</b>
<b>4</b>	<b>Design principles</b>	<b>2</b>
4.1	General principles	2
4.2	Design principles in relation to work organisation	3
4.2.1	Perform system design reviews and include prospective risk assessment	3
4.2.2	Individuals' and team work-related objectives	3
4.2.3	Extended reachability	4
4.2.4	Flexibility in time allocation	4
4.2.5	Definition of work-related services	5
4.2.6	Duration of working hours	5
4.2.7	Time off between successive work days or shifts	5
4.2.8	Time of day	6
4.2.9	Shift work	7
4.2.10	Breaks and rest pauses	7
4.3	Design principles in relation to working tasks	7
4.3.1	Operating strategies	7
4.3.2	Continuous time constraints	8
4.3.3	Flexibility of decision-making	8
4.3.4	Ambiguity of task goals	9
4.3.5	Complexity of task requirements	9
4.3.6	Time sharing	10
4.3.7	Dimensionality of motor performance	10
4.3.8	Mental models	11
4.3.9	Parallel versus serial processing	11
4.3.10	Decision support	11
4.3.11	Sustained attention	12
4.4	Design principles in relation to job	12
4.4.1	Social interaction	12
4.4.2	Dependencies on others' task performance	13
4.4.3	Identical task requirements	13
4.4.4	Confidential communication	14
4.4.5	Changes in task-related activities with different demands or types of mental workload	14
4.5	Design principles in relation to work equipment and interfaces	14
4.5.1	Design the socio-technical system transparent for the user	14
4.5.2	Re-evaluate after adopting an assistance system to an existing system	15
4.5.3	Time lag	15
4.5.4	Adequacy of information	15
4.5.5	Ambiguity of information	16
4.5.6	Signal discriminability	16
4.5.7	Redundancy	16
4.5.8	Compatibility	17
4.5.9	Accuracy of information processing	18
4.5.10	Controllability	18
4.5.11	Control dynamics	18

4.5.12	Tracking requirements	19
4.5.13	Error tolerance	19
4.5.14	Adjust system design	19
4.5.15	Anticipate shifts in operating states and potential consequences	20
4.5.16	Coupling in human-machine arrangements	20
4.5.17	Adaptable and adaptive human-automation interaction	21
<b>5</b>	<b>Information and training</b>	<b>21</b>
<b>Annex A (informative)</b>	<b>Design principles and their relation to the impairing consequences of mental strain</b>	<b>22</b>